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WILDLIFE REVIEW

AN ABSTRACTING SERVICE FOR WILDLIFE MANAGEMENT
ISSUED FOR THE INFORMATION OF COOPERATORS
BY THE FISH AND WILDLIFE SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

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Except as indicated, abstracts are by Neil Hotchkiss, editor.

WILDLIFE (GENERAL)--BEHAVIOR

TINBERGEN, N. Inleiding tot de diersocologie. 184 pages, illus. Gorinchem, Netherlands. 1946. 4.35 florins.

There are many good drawings in this introduction to the social behavior of animals. Birds are given considerable emphasis.

WILDLIFE (GENERAL)--BIBLIOGRAPHY

SMITH, MALCOLM, editor. The Zoological Record, volume the eighty-second; being the records of zoological literature relating chiefly to the year 1945. 1290 pages. Zoological Society of London. 1948. $17.60.

This volume includes much of the literature issued in enemy and occupied countries during the war. It is organized under 19 headings (mostly phyla or classes), each paged separately and available for prices varying from 2 to 15 shillings. The material is thoroughly indexed--birds, for example, by subject, location, and species.

WILDLIFE (GENERAL)--BIOGRAPHY & HISTORY

ERRINGTON, PAUL L. In appreciation of Aldo Leopold. The Journal of Wildlife Management 12(4): 341-350, illus. October 1948.

WILDLIFE (GENERAL)--CONTROL

KALMBACH, E. R., and LINDUSKA, J. P. Controls beyond control. Transactions of the Thirteenth North American Wildlife Conference. Pages 112-127. 1948.

"Under the urgencies of war an accelerated research program produced chemical agents which far surpassed in effectiveness most of the compounds previously used for the control of animal and plant pests. Many materials, developed to fill military needs, since have found an unlimited civilian market, and DDT, 1080, and 2,4-D are becoming household terms....." "Paralleling the development of these new toxicants has been the adaptation of the airplane for the dispersal of many. The combined result has been to reduce operational costs and increase greatly the situations and total land area now being subjected to pollution with economic poisons." In a section entitled "Operations against Birds and Mammals" Kalmbach discusses (1) the determination of the need for control, (2) hazards of control, and (3) intensity of control. Linduska discusses DDT under the heading of "Insecticides vs. Wildlife."

WILDLIFE (GENERAL)--EDUCATION

PRETH, HARRIS. Under the wildlife "blanket of ignorance"? Transactions of the Thirteenth North American Wildlife Conference. Pages 176-181. 1948.

A nation-wide public relations program is needed. It should (1) present the story of deer to the entire American people through the national magazines, (2) ask all national service organizations to set up permanent wildlife committees, (3) have every state hold quarterly press conferences and begin programs of wildlife expansion, and (4) set up an over-all clearing house of wildlife information.

WILDLIFE (GENERAL)--EDUCATION--Continued

SEAGEARS, CLAYT. Conservation education. New York State Conservationist 3(2): 4-5, illus. October-November 1948.

"This second article views a new and significant trend toward conservation consciousness, and suggests the cause. It also lists the Department's equipment to provide a certain amount of education for adults and to help with the more necessary training of youth, a function of almost hopeless limitations until the necessity for conservation, and at least some simple basic practices for its accomplishment, can be productively taught in our schools."

TURNER, DAVID B. Professional opportunities in the wildlife field. 208 pages. American Nature Association and Wildlife Management Institute, Washington, D. C. 1948. $1.00.

This thorough investigation was made between June 1945 and November 1946. Its purpose was to determine opportunities for employment, to furnish information to employers with respect to facilities for training and to educators on personnel needs of employers, and to obtain the opinions of professionals on adequate preparation for practice. Information was obtained through personal interview, institutional questionnaires, state and province questionnaires, individual questionnaires, correspondence, and study of publications. The data are presented under the headings of (1) individual training, (2) institutions, (3) federal employment, and (4) state and province employment. There are 13 pages of general summary and conclusions and a 61-page tabulation of institutions offering fishery and wildlife training.

WILDLIFE (GENERAL)--FAUNAS & MANUALS

CAMP, RAYMOND R., editor. The hunter's encyclopedia. 1152 pages, illus. Stackpole and Heck, Inc., Harrisburg, Pa. 1948. $17.50.

Its organization by major subjects makes this book more useful and entertaining than most Encyclopedias. These subjects are as follows: (1) big game, (2) small game (includes possum and coon), (3) animal predators (includes skunk), (4) winged predators (includes 16 hawks), (5) small mammals (mostly furbearers), (6) upland game birds, (7) shorebirds, (8) waterfowl, (9) color section (upland game birds and waterfowl), (10) firearms, (11) ammunition, (12) dogs, (13) miscellany (travel, camping, falconry, photography, etc.). Hunting information and natural history are intermingled. An appendix gives an account of game conditions and regulations, state by state. There is a detailed index and many photographs and drawings.

JOHNSON, DAVID H.; BRYANT, MONROE D.; and MILLER, ALDEN H. Vertebrate animals of the Providence Mountains area of California. University of California Publications in Zoology 48(5): 217-375, illus. 1948. $2.50.

The area reported upon comprises 1770 square miles in the Mohave Desert in eastern San Bernardino County. It is the fifth area in southern California to be similarly studied by the Museum of Vertebrate Zoology. Field work extended from 1917 to 1945 with 18 people spending 367 man-days. The authors describe in detail the physiography, plant belts, habitats, faunal relationships, and localities. Notes on the amphibians, reptiles, birds, and mammals occupy the greater part of the book, which is illustrated with excellent photographs and a large colored topographic and vegetation map.

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WILDLIFE (GENERAL)--HABITATS

BROWN, ANDREW H. Haunting heart of the Everglades. The National Geographic Magazine 93(2): 145-174, illus. February 1948.

The author describes his recent trip through the Florida Everglades. He discusses briefly the animal and plant life and the changes of the past 60 years. These changes have been caused by draining large areas of swamp and subsequently using this land for the production of cattle, truck crops, fruits, fibers, and sugar cane. The accompanying color photographs enhance the value of the article. --M. Alberts

BUTCHER, DEVEREUX. Going, going,--Florida's royal palm-big cypress forest. National Parks Magazine 22(93): 2-8, illus. April-June 1948.

Logging of bald cypress is destroying Fakahatchee Slough's primitive environment for both native plants and animals. It is exposing the area's magnificent royal palms to probable destruction by hurricanes.

HEDGPETH, JOEL W. On the shores of Laguna Madre. Audubon Magazine 50(2): 100-107, illus. March-April. 1948.

Laguna Madre of Texas is the saltiest bay in North America. It is located just inside the coast line between the city of Corpus Christi and the Rio Grande. Padre Island separates the Laguna from the Gulf of Mexico. "On the island, deer, coyotes, badgers, skunks, coons and lesser mammals live among its dunes, and coveys of doves and quail frequent the thickets of high grass and bushes which are the islands substitute for trees." "The waters of the Laguna teem with fish in spite of the high salinity, often twice that of normal sea water, but there are few crabs or shrimp, and oysters are found only at the extreme southern end near the dreamy little town of Port Isabel." There are plans to make Padre Island a national park and to contruct causeways across Laguna Madre. This would undoubtedly cause the northern half of the Laguna to become a brine pool and destroy the natural environment of this region's wildlife.--M. Alberts

MURRAY, J. J. The Great Dismal Swamp. The Raven 19(3 & 4): 14-26. March-April 1948.

The Dismal Swamp is located on the lowest, or lowest but one, of a series of coastal plain terraces in eastern Virginia. Lumbering is the chief industry in the swamp. An attempt is being made by the conservation departments of Virginia and North Carolina to make it into a national forest and thus save it from indiscriminate lumbering and wasteful forest fires. The author gives an interesting account of the early history of the swamp as well as some of the wildlife there now--especially the birds. He describes George Washington's efforts to drain portions of the swamp for agricultural use.--M. Alberts

SALYER, J. CLARK, II, and DUFRESNE, FRANK. Okefenokee, a national wildlife refuge. U. S. D. I., Fish and Wildlife Service, Conservation in Action No. 6. 10 pages, illus. 1948. 10¢ from Government Printing Office.

The authors review the history of this great south Georgia swamp, most of which was made a refuge in 1937. Among its animals are an estimated 5000 alligators; many deer, bear, coons, possums, and otters; and a great variety of birds and fishes. Much of its vegetation is in interspersed watery prairies and cypress swamps. Management practices include the preservation of the vegetation, maintenance of water levels, and law enforcement.

WILDLIFE (GENERAL)--HARVESTS

BARNES, WM. B. Indiana's 1946 game harvest. Outdoor Indiana 14(8): 14-16, illus. November 1947.

This report is based on questionnaries returned by 7420 sportsmen from all over the state. It compares the kill for the years from 1940 to 1946. The 1946 estimated kill of rabbits was more than 3½ million, squirrels 2¼ million, quail 1 million, all other species about ¼ million. There was high hunting pressure, and a high total kill that was probably out of proportion to game abundance.

LEEDY, DANIEL L. Further observations on the Ohio game kill and wildlife economics--1947. The Ohio Conservation Bulletin 12(8): 4-5,29. August 1948.

Data presented in this article are based on 5599 questionnaires returned by hunters at the end of the 1947 season. The hunters were well distributed over the state. Tables show hunting pressure and kill of these hunters; calculated total kills in 1946 and 1947 (about one-third decrease in 1947); average kills reported in 1932, 1933, 1946, and 1947; and the ways hunters and fishermen spent their money. Use of dogs, membership in conservation clubs, and other items are discussed in the text. An estimated 71 million dollars was spent by Ohio's holders of hunting and fishing licenses in 1947.

WILDLIFE (GENERAL)--MANAGEMENT
(See also VEGETATION--FOREST, Ackers)

ALLEN, DURWARD L. "Hunter management" with multiflora rose. The Journal of Wildlife Management 12(3): 325-326. July 1948.

Multiflora rose hedges will help to reduce trespass.

ALLEN, DURWARD L. Wildlife management in land-use programs. U. S. D. I., Fish and Wildlife Service, Wildlife Leaflet 309. 6 pages. July 1948.

Soil management and wildlife management go hand in hand. Game management programs still emphasize artifical stocking and predator control rather than habitat improvement. These attempts have been costly and largely ineffective. "Modern land-use practices for agricultural land favor wildlife principally in three ways: (1) Retaining and building fertility is fundamental.....(2) Erosion-control measures, for the most part, represent improvements in wildlife habitat.....(3) Modern methods also favor wildlife because they include a specific design to this end. Basic to sound use is the classification of land according to its capability to produce....." People must be made conscious of the need for and methods of conserving wildlife and other natural resources.--M. Alberts

ANONYMOUS. Federal aid in wildlife restoration: annual report of the Pittman-Robertson program for fiscal year ending June 30, 1947. 32 pages, illus. Wildlife Management Institute, Investment Bldg., Washington 5, D.C 1947

This is the second annual report to be published. It covers financial operations, types of work performed, and projects approved during the year. In 1947, 2½ million dollars were appropriated by Congress from the arms and ammunition excise tax fund. All but one state took an active part in the program. 260 projects were approved during the year. These involved surveys and investigations, land acquisition, development, maintenance, and coordination. Tables summarize the operations and show, by states, the projects approved during the year.

WILDLIFE (GENERAL)--MANAGEMENT--Continued

ANONYMOUS. Federal aid in wildlife restoration: Annual report of the Pittman-Robertson program for the fiscal year ending June 30, 1948. 44 pages, illus. Wildlife Management Institute, Investment Bldg., Washington D.C. 1948.

"A spectacular acceleration of Pittman-Robertson Federal Aid in Wildlife Restoration activities occurred during the year ending June 30, 1948. This was made possible by an appropriation of $9,031,273.51 by the Congress to finance this cooperative work. That amount was the total collections from the 11 percent excise tax on sporting arms and ammunition during the preceding fiscal year. The largest previous appropriation was $2,750,000 for the year ending June 30, 1942." The report, as in the report for 1947, describes the kinds of projects and shows, by states, the projects approved during the year.

ANONYMOUS. Game program and policy in Ohio. The Ohio Conservation Bulletin 12(4): 4-5, illus. April 1948.

The Ohio Division of Conservation's program and policy has 2 objectives: "Maintain already-existing good habitat" and "Restore, wherever feasible, depleted and insufficient natural habitat." The program is directed primarily toward increasing the population of rabbits and pheasants. The article discusses the importance of agriculture in wildlife propagation, education, and ways in which individuals and organizations can help.

BAKER, GERALD F., and SYLVESTER, WALTER. Kentucky's national wild life refuge. The Kentucky Warbler 23(2): 17-21, illus. Spring 1947.

The 65,000-acre Kentucky Woodlands National Wildlife Refuge is located between the Cumberland River and Kentucky Reservoir on the Tennessee River. In 1941 3 lakes containing about 300 acres were impounded on the Cumberland watershed. Duck-food plants were established and ducks quickly responded (more than 50,000 ducks used the refuge during the 1945-46 season). Wild turkeys, raccoons, white-tailed deer, quail, Canada geese, and fish are also being effectively managed. Farming and forest management are important phases of the program.

BEDICHEK, ROY. Adventures with a Texas naturalist. 293 pages, illus. Doubleday & Co., Inc., Garden City, N. Y. 1947. $3.50.

The author talks of many outdoor things, including landscape, water, birds, and people. He believes that "Natural life in North America has been more profoundly affected by fencing than by any other of man's devices....." and gives examples through 2 entertaining chapters. He talks of the effect of water on wild life in dry country; of bridges and cliff swallows; of predators and so-called predators; of goats and other domestic and wild animals and how they accommodate themselves to their environment and one another; of the Davis Mountains, golden eagles, mockingbirds, and many other things from his own experiences.

WILDLIFE (GENERAL)--MANAGEMENT--Continued

CARSON, RACHEL L. Guarding our wildlife resources. U. S. D. I., Fish and Wildlife Service, Conservation in Action No. 5. 46 pages, illus. 1948. 30¢ from Government Printing Office.

"This is the story of the wildlife resources of America, of their place in our history, and their value in our modern life. It is the story of the forces that threaten to destroy them, and the efforts that we must make, as individual nations and as a community of nations to preserve them." The author discusses, in particular, migratory birds, big game, saving endangered species, wildlife restoration, marine and inland fisheries, international cooperation in fishery conservation, and inter-American cooperation in conservation.

COTTINGHAM, HENRY P. Wildlife gets a break. Outdoor Indiana 14(4): 5, illus. July 1947.

200 new leased areas were developed in the spring of 1947 to provide more habitat for wildlife. One ton of seeds and 160,000 seedlings were planted. The areas themselves are closed but the farms on which they are located must permit hunting.

DAY, ALBERT M. Fish and Wildlife Service. Reprinted from the "Annual Report of the Secretary of the Interior for the Fiscal Year Ended June 30, 1947." Pages 295-318. 1947.

The principal subjects reported upon are the status of migratory birds, wildlife research, refuges, management of Alaska fisheries, salmon conservation in the Columbia and Sacramento Rivers, marine fishery research, management of inland fisheries, fish utilization, river basin studies, Federal aid in wildlife restoration, predator and rodent control, and wildlife protection.

DIERKING, HENRY. Increase wildlife by soil conservation. Michigan Out-of Doors 2(2): 4-5, illus. June 1948.

Wildlife depends upon the land; therefore good soil management will be the determining factor in wildlife production. The author tells how the farmer can cooperate in carrying out a program in which wildlife conservation and soil and water conservation are inseparably linked.--M. Alberts

DURYEA, PERRY B. An enlarged program for fish and game conservation. Part 2. To improve hunting. New York State Conservationist 3(1): 6-7. August-September 1948.

Habitat improvement, proper stocking, more hunting area, better management, and law observance are being emphasized in this enlarged program. More food and cover are being developed in cooperation with the soil conservation program; a shrub nursery has been started; and marshes are being restored. Many pheasants and mallards are being raised for stocking. Better management is being provided through careful appraisal of problems (by district game managers), investigation of problems (mostly under the Pittman-Robertson program), and local application (trapping of nuisance wildlife, eradication of water chestnut, winter feeding, etc.). Law observance is being promoted by better enforcement and by education.

WILDLIFE (GENERAL)--MANAGEMENT--Continued

DURYEA, PERRY B. An enlarged program for fish and game conservation. Part 3--Paying the bill. New York State Conservationist 3(2): 24-25, illus. October-November 1948.

Fish and game conservation in New York is financed from 4 separate funds: (1) conservation fund, from licenses and fines; (2) general taxation, which pays entirely for the Department's administration, conservation education, etc.; (3) postwar reconstruction fund; and (4) Pittman-Robertson fund, which pays for most of the game research and management work. In the continuing work, the conservation fund and the Pittman-Robertson fund are the most important. Total expectancy for financing an enlarged program is nearly 3½ million dollars. Inflation is accounting for half of the increased total costs. Game work is being developed most.

GRAHAM, EDWARD H. Summarization of the thirteenth North American wildlife conference. Transactions of the Thirteenth North American Wildlife Conference. Pages 630-635. 1948.

The conference made clear the need for both long- and short-term research. The subject of fisheries might well have been discussed more fully. Stocking, bounties, and control were questioned as management practices. With constantly increasing numbers of hunters the future for waterfowl appears to lie in selective, quality hunting. Marsh management and big game management techniques were considered. Techniques dealing with farm wildlife included the work of the social scientist in getting people to apply conservation. The land, wildlife, and people are all of one piece. "Conservation is a matter of life or death." "This may be hard on wildlife. It means that on most land wildlife must remain a by-product."

GREENWELL, GUY A. Wildlife values of Missouri farm ponds. Transactions of the Thirteenth North American Wildlife Conference. Pages 271-280, illus. 1948.

The Missouri Conservation Commission began promoting the construction of high-quality, multiple-purpose farm ponds in 1941. By 1946, more than 10,000 had been built and a Federal Aid study was organized to find out what they meant to wildlife. 91 ponds in 18 counties were studied. The fenced area around each was censused during each of 5 different periods. "Bobwhite and cottontail use was greatly increased in pond areas of high quality....." "The cover features showed greatest influence on the less mobile game species....." "A high level of use by many species indicated impressive wildlife values for farm ponds, but attention to pond location, cover development, and protection from livestock can bring greater values."

LEEDY, DANIEL L. Some wildlife and land use relationships in Ohio. The Ohio Journal of Science 48(4): 151-160. July 1948.

The author tells how changes in the Ohio environment due to settlement have brought about marked changes in the flora and fauna. Many of the original plants and animals were extirpated while others that were introduced multiplied and flourished. "Wildlife-land use relationships which are involved in the development of a wildlife management program based on habitat improvement are discussed under the following headings: (a) cultivated crops as wildlife food; (b) harvesting methods as they affect the availability of cultivated crops for wildlife food; (c) agricultural crops as wildlife cover; (d) Ohio woodlots and forest areas in relation to wildlife; (e) field borders in relation to wildlife and (f) miscellaneous practices and trends as they affect wildlife."--M. Alberts

WILDLIFE (GENERAL)--MANAGEMENT--Continued

LLOYD, HOYES. From facts to action. Transactions of the Thirteenth North American Wildlife Conference. Pages 10-17. 1948.

A stimulating summary of the many complexities of wildlife existence in a world increasingly dominated by man. Many of the facts are unknown or misunderstood, and conservation action is inadequate.

OLDS, HAYDEN W. An agricultural approach to wildlife management on state-owned lands. Transactions of the Thirteenth North American Wildlife Conference. Pages 246-255. 1948.

In Ohio, wildlife areas are made self-sustaining through agricultural and forest production. The primary objective of increased wildlife and opportunities for experimentation, education, and demonstration is obtained as a by-product.

PRICE, JAY H. Wildlife in forest management. Michigan Out-of-Doors 2(1): 8-9. April 1948.

This article tells how reforestation and timber management is being correlated with wildlife management on the Udell Forest-Wildlife Demonstration Area. The area was established in 1944. It consists of 1125 acres, marked off into 11 areas. Each is treated according to its individual needs. --M. Alberts

PROVOST, MAURICE W. Marsh-blasting as a wildlife management technique. The Journal of Wildlife Management 12(4): 350-387, illus. October 1948.

In 1940 and 1941 experimental blasting was done in a shallow-water marsh area in Palo Alto County and in a deep-water marsh area in Clay County, Iowa. The author describes (with the aid of drawings) the manner of blasting and its results; and he discusses the duration of excavations, their flora, and their animal life. On the basis of Iowa studies, blasted excavations are of much greater value among deep-water emergents, such as bulrushes, cat-tail, and bur-reed, than in shallow-water sedge marsh. The deep-water marshes usually are more attractive to muskrats and ducks; and muskrats help to maintain openings in them. "Blasting should be used in the management plan only when manipulation of water levels proves impracticable in obtaining the desired relationship of open water to suitable nesting cover."

SHEA, JOHN P. A new approach to farmer-sportsmen cooperation. Transactions of the Thirteenth North American Wildlife Conference. Pages 163-169. 1948.

Human relationships are the greatest problem of all in farmer-sportsmen cooperation. The author outlines methods of approach and procedure. It is essential to differentiate natural human groups from man-made organizations, natural leaders from apparent leaders. Professionals, farmers, and hunters, the 3 major groups in the situation, have many conflicting interests.

WILDLIFE (GENERAL)--MANAGEMENT--Continued

TRIPPENSEE, REUBEN EDWIN. Wildlife management: upland game and general principles. 479 pages, illus. McGraw-Hill Book Co., New York. 1948. $5.00.

This is the first of 2 volumes on wildlife management. The second will discuss fur bearers, waterfowl, and game fishes. The present volume deals with (1) farm wildlife (cottontail, Hungarian partridge, pheasant, bobwhite, fox squirrel, and gray squirrel);(2) forest wildlife (black bear, deer, grouse, varying hare, turkey, and woodcock); (3) wilderness wildlife (elk, bighorn, gray wolf, grizzly, moose, antelope, mountain goat, and woodland caribou); (4) miscellaneous wildlife relationships (variations in numbers, predatory relationships, game harvest, refuges, etc.); and (5) wildlife administration.

WILDLIFE (GENERAL)--MORTALITY
(See also WILDLIFE (GENERAL)--CONTROL, Kalmbach & Linduska)

BEATTY, ROBERT O. Wildlife's stake in pollution abatement. Transactions of the Thirteenth North American Wildlife Conference. Pages 563-594. 1948.

The author presents (1) the statements of the fish and game departments of 24 states regarding the scope of municipal and industrial pollution, (2) a summary of pollution control statutes by states and (3) a summary of treatment by states. He also discusses DDT and plankton as pollutants. Pollution is much more than a public health matter, and there is need for critical research on its effects on animal populations. To satisfy this need there should be (1) an expansion of biological parameters for the measurement of pollution effects on plankton, bottom organisms, aquatic plants, and terrestrial animals, (2) quantitative studies of the wildlife crop destroyed and the habitat affected by pollution, (3) development of standards for the measurement of toxicity of municipal and industrial wastes, and (4) development of standards of water purity on a regional, state-wide, or watershed basis, below which water should not be permitted to deteriorate.

LINDUSKA, JOSEPH P., and SURBER, EUGENE W. Effects of DDT and other insecticides on Fish and Wildlife: Summary of investigations during 1947. U. S. D. I., Fish and Wildlife Service, Circular 15. 19 pages. 1948. 10¢ from Government Printing Office.

This is the third of a group of yearly reports. It summarizes laboratory tests, field tests, and the results of the control of forest insects, orchard insects, and ticks. The work was done in Idaho, Wyoming, Maryland, Georgia, Texas, and West Virginia. Some of the DDT applications were heavier than in the 2 previous years, and bird mortality was greater. In general, the range of effects of DDT was similar to that of the previous years.

WILDLIFE (GENERAL)--MORTALITY--Continued

NELSON, ARNOLD L., and SURBER, EUGENE W. DDT investigations by the Fish and Wildlife Service in 1946. U. S. D. I., Fish and Wildlife Service, Special Scientific Report No. 41. 8 pages. May 1947. Limited distribution.

In 1946, field and laboratory studies on the relation of DDT to birds, fishes, and oysters were carried on in Maryland, Pennsylvania, South Carolina, Georgia, New York, West Virginia, and Connecticut. In 2 areas these were continuations of 1945 observations. Most of the DDT was applied by airplane at rates under 1.1 pound per acre. Control of ticks, insects, and barnacles was fair to successful. Mortality to adult mammals and birds was not apparent where DDT concentrations were under 3 pounds per acre. Fishes were killed at concentrations of less than 1 pound per acre.

WILDLIFE (GENERAL)--POPULATIONS

COLE, LAMONT C. Population phenomena and common knowledge. The Scientific Monthly 67(5): 338-345, illus. November 1948.

Population phenomena are not generally understood. The author reviews them.

HILL, RALPH R., and KIMBALL, JAMES W. Uniformity of expression in game management. The Journal of Wildlife Management 12(3): 232-236. July 1948.

The authors recommend expressing population densities in terms of animals per acre; roadside counts in terms of animals per unit of distance; sex ratios with 100 females as the unit. Most important, however, is "..... the need for the establishment of standards of expression which will be taught in the wildlife schools and used uniformly in the field."

MACIAS A., LUIS. Wildlife conditions in Mexico. Transactions of the Thirteenth North American Wildlife Conference. Pages 6-10. 1948.

Mule deer and wild sheep have been much reduced by hunting in northwest Mexico. Only one adult mule deer may now be taken in a year, and that only in December. There is an indefinite closed season on wild sheep and antelope. The number of bears is such that they do not need protection. The author believes that the slowly increasing bob-white population isn't near its maximum density because of various mortality factors. The spread of hoof and mouth disease has been stopped, and it has not been observed among wild animals. A complete revision is now being made of wildlife legislation.

PERRY, ROBERT F. Conesus L. New York State Conservationist 3(1): 20-21, illus. August-September 1948.

Conesus Lake is outstanding for its northern pike, walleyes, and smallmouth bass. A few blacks, mallards, bluewinged teal, and wood ducks breed at the south end of the lake; and there is a good fall flight of diving ducks. Just north of the lake is one of the largest pheasant and fox populations in the state. Deer are so plentiful and are doing so much damage to crops that either sex may be taken in 1948 in a 10-county area surrounding Conesus Lake.

WILDLIFE (GENERAL)--POPULATIONS--Continued

SCHORGER, A. W. Changing wildlife conditions in Wisconsin. Wisconsin Conservation Bulletin 13(6): 53-60, June 1948.

"Civilization has eliminated a number of wildlife species and reduced the population of others, but some are more abundant than before." The fisher and marten were exterminated by trapping. Moose and elk are now extinct. Waterfowl have decreased in number due to drainage of marshes and to overshooting. The deer and muskrat have increased. The rapid increase in the deer is out of proportion to their food and thus constitutes one of the chief problems in game management. Wisconsin has undergone changes so great, due to clearing the land for farming and through lumbering, that it is impossible to restore some of the wildlife. Wise management is required to maintain what is left.--M. Alberts

VOGT, WILLIAM. North American animals threatened with extinction. Transactions of the Thirteenth North American Wildlife Conference. Pages 106-110. 1948.

A discussion of the limited efforts of 3 government agencies to save about 40 species of rare or otherwise threatened mammals, birds, reptiles, and fishes. They need the interest of the people of America.

WILDLIFE (GENERAL)--PROTECTION

BARSKE, PHILIP. Let's play the game. The Ohio Conservation Bulletin 12(11): 16-18, illus. November 1948.

This is a detailed discussion of game law violation and of ways for decreasing it. "Never in the history of American outdoor sports has there been such a tremendous and flagrant series of game law violations throughout the country as there was last year."

BÜTTIKOFER, JOHANN. International conference for the protection of nature. 286 pages, illus. Provisional International Union for the Protection of Nature. Acting Agency: Swiss League for the Protection of Nature, Basle. December 1947.

Those interested in wildlife will want to read the proceedings of this informal conference, held at Basle from June 30th to July 7th, 1946. "..... the participants came to the unanimous conclusion the an active organization, widely international, and representative in character, adequately financed and with adequate terms of reference, should be created in order to facilitate the co-operation of national societies concerned with the protection of nature and of scenery."--M. Alberts

COOLIDGE, HAROLD J. New horizons in international conservation. Transactions of the Thirteenth North American Wildlife Conference. Pages 142-157. 1948.

The author emphasizes (1) the importance of supporting wildlife conservation at 4 forthcoming international conferences, (2) the importance of "The Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere", (3) the need for conservationist members on the U. S. National Commission for UNESCO, (4) the need for protecting and preserving significant areas and objects by all countries, and (5) the need for establishing an "International Survival Office" to coordinate information on and recommend action for the benefit of vanishing species of fauna and flora.

WILDLIFE (GENERAL)--RESEARCH

BODE, I.T. Is wildlife research paying its way? Transactions of the Thirteenth North American Wildlife Conference. Pages 18-30. 1948.
The author believes that it is. Wildlife administrators from a majority of the states supply him with confirming examples.

LEOPOLD, ALDO. Why and how research? Transactions of the Thirteenth North American Wildlife Conference. Pages 44-48. 1948.
"The primary purpose of wildlife research is, in my view, to develop and expand this understanding of the biotic drama. It must, of course, contrive also to keep wildlife on the map, in good quantity, and in as much diversity as possible." Three criteria of deep-digging research are (1) "..... continuous yearly banding and censusing of sample populations....." (2) "..... continuous yearly age and sex classification of populations and bags.....", and (3) "..... physiological exploration....."

LINSDALE, JEAN M. The Frances Simes Hastings Natural History Reservation, 1937-1947. 23 pages. 1947.
This reservation of 1600 acres in the Santa Lucia Mts., Monterey Co., California is managed by the Museum of Vertebrate Zoology of the University of California. The original purposes were "1. To preserve an area in California's coastal region where native plants and animals may live undisturbed by human use of the land. 2. To provide for continuous study of vertebrate animals, especially their numbers and relationships to their surroundings, ..." The author includes yearly summaries of activities from 1940 to 1947. A large number of people have worked at the reservation and more than 30 publications have pertained to it.

SHOEMAKER, CARL D. The congressional attitude toward research. Transactions of the Thirteenth North American Wildlife Conference. Pages 31-44 1948.
The sections entitled "Failures of Research" and "Practical Wildlife Research" give examples that are background for the author's conclusion that "The best research comes from the scientist who keeps his head in the clouds of inquiry and his feet on solid ground."

WILDLIFE (GENERAL)--STOCKING

LEHMANN, V. W. Restocking on King Ranch. Transactions of the Thirteenth North American Wildlife Conference. Pages 236-239. 1948.
On the large King Ranch in southern Texas exotic game birds and mammals have been released for many years without outstanding success. In contrast, native turkeys and bobwhites have been transplanted with good results. "Selective predator control, habitat improvement, research, and regulation of human harvest are the real pillars of game management on King Ranch. Restocking of adapted species, however, has been a valuable technique."

WILDLIFE (GENERAL)--STOCKING--Continued

SKIFF, J. V. Is there a place for stocking in game management? Transactions of the Thirteenth North American Wildlife Conference. Pages 215-227, illus. 1948.

The author, using the pheasant as an example, discusses stocking as a means of introducing new species; the roles of stocking during periods of normal abundance and periods of low population; stocking for the gun; and the quality of stocked birds. He believes that both stocking and habitat improvement have a place in game management.

STUDHOLME, ALLAN T. A bird in the bush is worth two in the hand. Transactions of the Thirteenth North American Wildlife Conference. Pages 207-213. 1948.

A summary of game stocking in the United States. Introduction of a few species in suitable habitats has been successful. Examples are ringnecked pheasant, Hungarian partridge, Canada goose, whitetailed deer, and beaver. Most attempts at introduction have failed.

WILDLIFE (GENERAL)--VALUES
(See also WILDLIFE (GENERAL)--HARVESTS, Leedy)

CAHALANE, VICTOR H. Parks and people. National Parks Magazine 22(93): 12-19, illus. April-June 1948.

An account of the recreational significance of National Parks and other wild areas and of the interests that would destroy them for the sake of exploiting mineral, game, timber, or other resources.

DAMBACH, CHARLES A., and LEEDY, DANIEL L. A recent evaluation of Ohio's wildlife resources. Transactions of the Thirteenth North American Wildlife Conference. Pages 508-520, illus. 1948.

"A study of the wildlife resources of Ohio was made by means of the hunter questionnaire, an intensive 15-county survey of business establishments, analysis of fur-dealer reports and various other sources of pertinent data. The study revealed that the aggregate value of products produced from wildlife resources during 1946 was at least $14,486,000 and that the money expended for hunting and fishing amounted to $61,043,000." The principal recipients are small businesses and others who cater to hunters and fishermen. The primary producers of wildlife, principally landowners, receive very little.

DOMINION BUREAU OF STATISTICS. Canada 1948; the official handbook of present conditions and recent progress. 266 pages, illus. Dept. of Trade and Commerce, Ottawa, Canada. 25¢

Among the score of chapters are ones of 6 pages each on fisheries and furs. Canada has nearly 60 kinds of food fishes. The total value of all fisheries products marketed in 1945 was more than 113 million dollars. The total number of pelts taken in 1946 was more than 7½ million and their value more than 43 million dollars. Muskrat and mink each contributed about one-quarter; beaver and foxes each about one-sixth of the total value. These figures include the take from fur farms.

WILDLIFE (GENERAL)--VALUES--Continued

LEEDY, DANIEL L., and DAMBACH, CHARLES A. An evaluation of Ohio's wildlife resources. The Ohio Division of Conservation and Natural Resources, Wildlife Conservation Bulletin No. 5. 18 pages, illus. July 1948.

This bulletin is, in part, a revision and condensation of Dambach and Leedy's "A Recent Evaluation of Ohio's Wildlife Resources", which is abstracted on page 14. More than 71 million dollars was spent on hunting and fishing in Ohio in 1947. Most of the hunting pressure was on rabbits, pheasants, fox squirrels, and gray squirrels.

MAMMALS--FAUNAS & MANUALS

DALQUEST, WALTER W. Mammals of Washington. University of Kansas Publications, Museum of Natural History 2: 1-444, illus. April 9, 1948.

The author's field work was done from 1936 to 1940. In this report he emphasizes ecology more than taxonomy, and has rather detailed accounts of physiographic provinces, distributional areas, climate and vegetation, life-zones, and geologic history. He speculates on the emigrational history and later distributional history of the mammals; and in the account of the species and subspecies writes mostly of their habits and distribution. There are approximately 75 distribution maps, 60 photos of the country and of mammals, and 240 items in the bibliography. Harold E. Broadbooks reviewed "Mammals of Washington" on page 305 of the August 1948 Journal of Mammalogy. C. C. Sanborn reviewed it on page 525 of the October 1948 Ecology.

MORRIS, R. F. The land mammals of New Brunswick. Journal of Mammalogy 29(2): 165-176. May 1948.

The material presented under "Accounts of Species" shows that there have been marked changes in abundance and distribution of several species during the past 100 years. Most changes are attributed to factors associated with land use and settlement, but it is pointed out that some shifts occurred before the advent of white man. Of the larger carnivores, the cougar, wolf, and wolverine have disappeared, and the lynx may be on the verge of extinction. The bear and bobcat are common. Marten, fisher, and otter are now limited to remote parts of the province, apparently as a result of over-trapping. Beaver, skunk, and raccoon are increasing. Caribou have disappeared, but white-tailed deer have become common.--Lloyd W. Swift.

WETZEL, R. M. Additional records of Illinois mammals. Transactions of the Illinois State Academy of Science 40: 228-233. 1947.

These records have accumulated since the publication of "Mammals of Illinois" by Walter L. Necker and Donald M. Hatfield, in 1941 (Bul. Chicago Acad. Sci. 6(3): 17-60. May 1941).

MAMMALS--POPULATIONS

CAHALANE, VICTOR H. The status of mammals in the U. S. National Park system 1947. Journal of Mammalogy 29(3): 247-259, illus. August 1948.

A discussion of the status of about 30 of the more important mammals that inhabit the larger parks and monuments, based largely on reports from field personnel. Although the majority of mammals are present in normal numbers, there are problems. Some of these are caused by artificial boundary and area inadequacies, some by contacts with man, both inside and outside the parks, and some by forage shortages, especially for elk and mule deer. The 8 most urgent problems are listed.--Lloyd W. Swift.

MOHR, CARL O. Major fluctuations of some Illinois mammal populations. Transactions of the Illinois State Academy of Science 40: 197-204, illus. 1947.

The mammals discussed are gray fox, groundhog, Norway rat, opossum, Pennsylvania meadowmouse, prairie meadowmouse, raccoon, red fox, and skunk. M. Alberts.

MAMMALS--BIG GAME (GENERAL)
(See also WILDLIFE (GENERAL)--POPULATIONS, Macias)

COSTLEY, R. J., and others. Wildlife, a resource of the range. Pages 243-248 in "Grass; the yearbook of agriculture, 1948." Superintendent of Documents, Washington 25, D. C. 1948. $2.00.

The authors discuss the effect on the western range of big game, rodents, and rabbits; how wildlife and livestock get along together; and the effect on wildlife of changes in the range.

RIORDAN, LAURENCE E. The sexing of deer and elk by airplane in Colorado. Transactions of the Thirteenth North American Wildlife Conference. Pages 409-428, illus. 1948.

Colorado has used airplanes for 9 years in managing its big game herds, particularly for sex-ratio determination in mule deer and elk. The author discusses equipment and methods, pilot skill, weather, light conditions, snow cover, terrain and flight techniques, and field application of the method. "The skill of the pilot is the most important single factor in the work."

SCOTT, WALTER E. Methods of controlled public hunting in the United States and Canada. The Journal of Wildlife Management 12(3): 236-240. July 1948.

Controlled hunting is now important in preventing over-shooting and over-concentrations of hunters in the western states, and locally elsewhere. Big game herds needing reduction may be reduced in this way. Controlled hunting may solve special problems and may improve hunting generally.

MAMMALS--BIG GAME (DEER)
(See also WILDLIFE (GENERAL)--POPULATIONS, Perry)

ALDOUS, C. M. Control of deer irruptions in Nevada. U. S. D. I., Fish and Wildlife Service, Special Scientific Report No. 57. 16 pages, illus. September 1948.

From 1941 to 1947 a study was made to determine what could be done to prevent deer irruptions in the Intermountain Region. The study was undertaken by the Forest Service and the Fish and Wildlife Service on the Nevada National Forest near McGill, Nevada. "In order to be able to prevent deer irruptions, the first requisite is to be able to recognize the early stages of browse deterioration on the species used by the deer." "As soon as range degradation is noticed, the second stage of action is to immediately start a move for reducing the deer and possibly some livestock from the range in question." "Thirdly, it is necessary to make a good range appraisal to determine to what extent the deer and livestock compete for the forage and to what extent either or both should be reduced." "The fourth step is to educate the public....." M. Alberts

ALDOUS, SHALER E., and SMITH, CLARENCE F. Fall and winter food habits of deer in northeastern Minnesota. U. S. D. I., Fish and Wildlife Service, Wildlife Leaflet 310. 10 pages, illus. August 1948. Free.

Contents of 21 deer stomachs taken in the fall of 1936 and 51 stomachs taken in the late winter of 1936-37 are listed. Another list shows the availability of browse species and their use in the Jonvick deer yard. "The browse species that form the greater part of the winter food are those now most available but not those of greatest nutritive value." "Many of the choice browse species are either uncommon or are becoming unavailable because of heavy browsing in previous years." "Balsam fir..... is not capable of maintaining the deer in good health." "Maple brush is the most available of the choice browse species in this area." "Variation in availablility of certain browse species in the different deer concentration grounds indicates that management practices must be developed for limited areas."

ALLEN, GEORGE W. The management of Georgia deer. The Journal of Wildlife Management 12(4): 428-432, illus. October 1948.

A resume of conditions in recent years. Overpopulation and semi-domestication are prevalent in the South Georgia population of Virginia white-tails. In North Georgia, deer have been stocked from the North, West, and South, and protection is the principal management problem. On the Coastal Islands there is starvation, no hunting pressure, and competition with other species. Deer management in Georgia now includes the following practices: (1) trapping and redistributing native stock, (2) managing hunts in newly acquired areas, (3) research on food habits and ecology, (4) better public education, and (5) cooperative management among private landowners.

MAMMALS--BIG GAME (DEER)--Continued

ALLEN, JOHN M. Four thousand whitetails can be wrong. Outdoor Indiana 15(2): 2-3, illus. February 1948.

Between 1934 and 1942 a total of 296 deer were released in Indiana, principally in the south-central part of the state. By the fall of 1944 there were an estimated 1200 and the herd had invaded unstocked counties; and by December 1947 there were 4000. There are believed to be about 4 does for every buck. Deer also are drifting in from Michigan. Indiana deer should be managed through orderly harvesting of the annual surplus. Since a large portion of the herd is on state-owned property, hunter control can be relatively easy--but there are other problems. One of the important ones is to educate the potential hunters.

ANONYMOUS. Wyoming deer-- trophy game of the West. Wyoming Wild Life 12(7): 4-11, 36-39, illus. August 1948.

Population studies show that deer are on the increase in Wyoming. The 1947 harvest was 18,752 and was estimated worth $710,468. "Management of Wyoming deer today is working toward the reduction of competition between deer and elk on winter range by opening the deer seasons in critical areas for a longer and later autumn season."--M. Alberts

CHAPMAN, FLOYD B., and LEEDY, DANIEL L. The 1947 deer hunt at a glance. The Ohio Conservation Bulletin 12(2): 18-19, illus. February 1948.

This was Ohio's fourth recent deer season and the first in northeastern Ohio since 1903. In northeastern Ohio deer of all ages and both sexes were taken to alleviate crop damage and highway travel hazards. In 8 counties there was an estimated kill of 25% of the population. Most of the deer were in good physical condition.

COSTLEY, RICHARD J. Crippling losses among mule deer in Utah. Transactions of the Thirteenth North American Wildlife Conference. Pages 451-457. 1948.

An area of nearly 480,000 acres in the Dixie National Forest was studied in 1940. Extensive and intensive observations, totaling 241 man-days, led to the following conclusions: (1) where bucks only were hunted 42% of the deer killed were left on the range; (2) where any age or sex could be taken 25% of those killed were left.

CRAMER, H. T. J. Harvest of deer in Wisconsin. Transactions of the Thirteenth North American Wildlife Conference. Pages 492-508. 1948.

The author outlines the history of white-tailed deer in Wisconsin. In the early part of the century the population was low; but by 1935 it had increased to where there was general overbrowsing of deer yards. Since then many deer have starved nearly every winter, and there has been increasing damage to farm crops and to forest reproduction. In 1943 an open season which included antlerless deer in the north helped to alleviate this situation. Buck seasons (except in agricultural counties) since then have allowed it to become serious again. In 1946 and 1947, controlled hunts of antlerless deer on the Necedah National Wildlife Refuge showed that concentrated hunting is necessary in some places to reduce the deer population to where the land will support it. Public opinion is largely against drastic reduction; but the Conservation Department believes it is the only way to save the state's deer herd.

MAMMALS--BIG GAME (DEER)--Continued

DASMANN, WILLIAM P. A critical review of range survey methods and their application to deer range management. California Fish and Game 34(4): 189-207. October 1948.

The author discusses forage inventories, range condition surveys, and forage utilization checks as they apply to western deer. He concludes that "The deer range manager should aim at adjustment of stocking to a level at which the vegetative cover and/or the soil mantle will not be damaged in any but the poorest growth years. It is believed the most direct and reliable method of deer population control is one based on utilization checks of intensity of cropping key plant species on key areas....." There is a list of about 40 references.

HAUGEN, ARNOLD O. Bow 'n' arrow hunting--good conservation. Transactions of the Thirteenth North American Wildlife Conference. Pages 459-464. 1948.

Most of the nation's bow hunting is done in Michigan and Wisconsin. "In Michigan alone the sport has grown from 194 archers in 1937, the first year of a special season, to 7,700 bow hunters in 1947." It provides a maximum of sport at little cost to the deer population. Crippling losses are very low.

McCAIN, RANDAL. A method for measuring deer range use. Transactions of the Thirteenth North American Wildlife Conference. Pages 431-440, illus. 1948

"This is an account of one of the methods used by the Interstate (California and Oregon) Deer Herd Committee to collect basic management data." It consists of making sample counts of pellet groups. The studies were started in 1945 with the aim of measuring the number of deer on more than 300,000 acres. Sampling pellet groups has shown that this herd congregates on 2 areas totaling about one-quarter of the winter range. "The total deer population computed from the pellet group counts was found to be in close agreement with population estimates based on road strip counts and migration tract counts."

WARD, L. W. Decline in deer mortalities. West Virginia Conservation 12(7): 9-10. October 1948.

This is a compilation of conservation officers' deer mortality reports for the fiscal year ending June 30, 1948. There is a table showing the causes of deer mortality and its county distribution.--M. Alberts

WEBB, WILLIAM L. Environmental analysis of a winter deer range. Transactions of the Thirteenth North American Wildlife Conference. Pages 442-449, illus. 1948.

The range analyzed comprises about 4,000 acres of Huntington Wildlife Forest Experiment Station in the Adirondacks of northern New York. The winters are long, cold, and snowbound. During the winters of 1938 to 1943 the white-tailed deer concentrated on about 30% of the forest area--where there was good coniferous cover and little food. Outside the concentration the area had low coniferous cover and a high food rating. 10 species of woody plants provide the bulk of the food. Forest types and topography have a significant effect on food and cover ratings.

MAMMALS--BIG GAME (ELK, ANTELOPE, ETC.)

BARKER, ELLIOTT S. Antelope comeback. Field & Stream 53(4): 26-27,121-123, illus. August 1948.

Trapping antelope for transplanting was begun in New Mexico in 1937. By 1942 more than 50 new herds were started within the state. The population has been built from about 1700 in 1916 to over 30,000 at the present time. There are 65,000 square miles of antelope habitat, and it is the intention of the New Mexico Game Department to repopulate it all. The author describes the development of trapping methods and mentions limiting factors in antelope environment.

MITCHELL, GLENN E., and LAUCKHART, J. BURTON. Management of the Yakima Rocky Mountain elk herd. Transactions of the Thirteenth North American Wildlife Conference. Pages 401-406. 1948.

In 1913, 42 cow and 8 bull elk were planted in this area on the east slope of the Cascades in Washington. By 1927 the herd increased to where the hunting of bull elk was allowed. Since then the range deteriorated and conflict arose between sportsmen and cattlemen. The Forest Service and the State Game Department started working out an orderly plan of management in 1943. Both stockmen and sportsmen are its strong supporters. The range is improving.

MUNNS, E. N. Further note on the European wisent. Journal of Mammalogy 29(3): 300-301. August 1948.

The author supplements Richard Glover's article on page 333 of the November 1947 Journal of Mammalogy (abstracted on page 9 of Wildlife Review No. 54). He tells what happened to the Bialoieza Forest herd during World War II. It now numbers 19 animals. A herd of 25 animals in Silesia did not suffer during the war.

SUMNER, LOWELL. An air census of Dall sheep in Mount McKinley National Park. The Journal of Wildlife Management 12(3): 302-304, illus. July 1948.

On June 2, 1947 an air census was made to supplement the ground observations of Dr. Adolph Murie. 418 sheep were counted in 4 hours of flying. 180 animals known from Murie's ground count were missed. The air census is considered a useful tool in checking changing conditions.

MAMMALS--FURBEARERS--(General)

ASHBROOK, FRANK G. Fur farming for profit. Revised. 429 pages, illus. Orange Judd Publishing Co., New York. 1948. $4.00.

Fur farming has followed the early exploitation of wild fur resources without a conspicuous intermediate stage of management under natural conditions. The muskrat is an exception because it is not profitably raised in captivity and because it responds to management in the wild. The book deals primarily with fox and mink farming, but there are discussions of the other common fur animals. More than 50 pages are devoted to beaver and muskrat farming. Directions are given for trapping and transporting live animals. Hartley H. T. Jackson reviewed this book on page 304 of the August 1948 Journal of Mammalogy.

MAMMALS--FURBEARERS (GENERAL)--Continued

ASHBROOK, FRANK G. Fur--an important wildlife crop. Transactions of the Thirteenth North American Wildlife Conference. Pages 465-474, illus. 1948.

The annual raw fur crop in the United States is worth more than 100 million dollars. About 15% of this goes to fur farmers who produce silver foxes and minks. The supply of wild fur has decreased greatly since 1910, and there is need in many states for population inventories and for restoration and management. Such work is very poorly financed, since the trapping population pays an average of less than a dollar apiece for licenses. Louisiana, the largest fur-producing state has an annual income of $200,000 for financing fur restoration and management. This comes principally from a severance tax on furs and from furs taken on state game preserves. Other states might well use some of the same methods.

LEEDY, DANIEL L. Ohio's fur crop. The Ohio Conservation Bulletin 12(2): 14-15. February 1948.

The author summarizes the number of pelts handled by Ohio fur dealers from 1938 to 1947. They averaged more than 900,000 a year. At least 10% more are believed to have been bought by out-of-state dealers. The pelts taken during the 1946-1947 season brought 1 2/3 million dollars. 75% of the pelts were muskrat.

LEEDY, DANIEL L. Ohio's 1947-1948 fur crop. The Ohio Conservation Bulletin 12(11): 30-31. November 1948.

Ohio is one of the leading fur-producing states. During the 1947-1948 season approximately 600,000 pelts were purchased by Ohio dealers from hunters and trappers. This was only two-thirds the average for the preceding 10 years. Muskrats made up 80% of the total catch, coons 10%. Actual populations, weather, and economic conditions all affect the yearly variations. The pelts sold in 1947-1948 brought 1 2/3 million.

MAMMALS--FURBEARERS (BEAVER)

HENSLEY, ARTHUR L., and FOX, B. C. Experiments on the management of Colorado River beaver. California Fish and Game 34(3): 115-131, illus. July 1948.

The authors report on the study which California and Arizona made during the period 1943-1947. Surveys to determine density of population and to evaluate the effects of cropping were made each year along the portion of the river between the two states. It was found that "Harvesting beaver on a per pelt basis proved more satisfactory than on a basis of salaried trappers. Equipment purchased by the states made it possible to maintain a higher efficiency in the trapping activity by reducing the loss in trapped animals and damage to pelts. Systematic trapping requires close supervision or the animals will not be cropped to the best advantage or in the predetermined numbers." "The fact that this program has been more than self sustaining, yielding a substantial profit credited to the participating states, justifies continuance of the managment study."--M. Alberts

MAMMALS--FURBEARERS (BEAVER)--Continued

SIMON, JAMES R., and BROWN, ROBERT C. Castors and castoreum. Wyoming Wild Life 12(6): 14-16, illus. June 1948.

While the pelts from the beaver are of greatest value, the beaver's musk glands, have some commerical value. The secretion from the gland, castoreum, is used in blending perfume, in the making of patent medicine, and for scents to lure animals into traps. The dried gland brought from $5.50 to $7.00 per pound as of May, 1947.--M. Alberts

MAMMALS--FURBEARERS (MUSKRAT)
(See also WILDLIFE (GENERAL)--MANAGEMENT, Provost)

BROHN, ALLEN, and SHANKS, CHARLES E. Incisor width as an age criterion in muskrats. The Journal of Wildlife Management 12(4): 437-439, illus. October 1948.

Incisor widths were measured in 283 Missouri muskrats. There was so much overlap in adults and sub-adults ".....that this method cannot be used to separate the age classes of Missouri muskrats."

DOZIER, HERBERT L. Estimating muskrat populations by house counts. Transactions of the Thirteenth North American Wildlife Conference. Pages 372-389, illus. 1948.

Reprinted as Fish and Wildlife Service Wildlife Leaflet 306, which was abstracted on page 11 of Wildlife Review No. 54.

ERRINGTON, PAUL L. Environmental control for increasing muskrat production. Transactions of the Thirteenth North American Wildlife Conference. Pages 596-605. 1948.

In Iowa the muskrat has a fair ability to adapt itself to environmental changes. Ultimately, however, it is limited by water; so manipulation of water will always be one of the principal techniques in muskrat management. The author reviews the use of dams, ditches, cultivation of bottom soil and other means of producing useful marsh vegetation; the direct effect of water levels; the interrelations of muskrats, carp, livestock, and waterfowl; effects of crowding; and other factors. He cites more than 40 articles.

FIELD, WILLIAM H. Muskrats and muskrat farming. Wisconsin Conservation Bulletin 13(8): 9-13, illus. August 1948.

There are now 340 areas licensed as muskrat farms in Wisconsin. Their size varies from a few acres to several thousand acres. Sites can be made suitable for muskrat farming by plugging ditches in abandoned drainage districts, diverting water courses, constructing dykes, dredging ditches and pools.--M. Alberts

MAMMALS--FURBEARERS (COYOTE & FOXES)
(See also BIRDS--HAWKS & OWLS, Scott)

BENNITT, RUDOLF. The coyote bounty system in Missouri, 1936-1947. Transactions of the Thirteenth North American Wildlife Conference. Pages 314-321, illus. 1948.

"The number, distribution, and cost of coyote bounties in Missouri..... have increased rapidly in the 12 years from 1936 through 1947." "..... complaints of damage have continued to increase; so has the population of coyotes." "It is virtually certain that there is no relation between total numbers of coyotes and amount of damage." "The bounty system cost the counties about $50,000 in 1947--five times the cost of the extension-trapper system that aims at damage-control through farmer cooperation rather than the killing of large numbers."

BRADLEY, BEN O. Rabies and fox control. New York State Conservationist 3(2): 14-15. October-November 1948.

An epidemic of rabies that began in 1945 and had spread to 20 counties by 1948 is the most serious on record in New York State. During that period 283 rabid dogs, 784 rabid foxes, and 886 rabid cattle were identified. The Conservation Department trapped 3600 foxes (red and gray) from October 1946 to March 1948. At first they were taken in a zone surrounding the known area of infection; but with its continued spread they are now being trapped intensively immediately around small infected areas.

CAHALANE, VICTOR H. Predators and people. National Parks Magazine 22(95): 5-12, illus. October-December 1948.

Predatory mammals are as interesting and therefore as entitled to a place in the National Parks as are other mammals. The author reviews the history of coyotes in Yellowstone and wolves in Mt. McKinley Park, and shows their importance in controlling populations of other species. They do not exterminate them, nor do their own numbers become unduly large.

EADS, RICHARD B. Ectoparasites from a series of Texas coyotes. Journal of Mammalogy 29(3): 268-271. August 1948.

2280 parasites were taken from 90 young and adult coyotes (Canis latrans). 290 parasites were taken from 8 wolves (Canis niger rufus). Several of the parasites are vectors of endemic typhus, sylvatic plague, spotted fever, tularemia, and other diseases. The coyotes were heavily infested with fleas, lightly with ticks. The wolves were heavily infested with ticks, lightly with fleas.

MAMMALS--FURBEARERS (COYOTE & FOXES)--Continued

PRESNALL, CLIFFORD C. Applied ecology of predation on livestock ranges. Journal of Mammalogy 29(2): 155-161, May 1948.

The western range is estimated at 728 million acres of uncultivated land supporting approximately 19,300,000 animal units of livestock and 9,000,000 animal units of big game (1 animal unit= 1 cow, 5 sheep, etc.). Wolves and grizzly bears have been eliminated from the livestock areas, but coyotes have persisted and expanded in distribution and possibly also in numbers. Thus the coyote is the primary predator affecting the western livestock industry and big game herds. Animal loss by predation to all western livestock is estimated between 1.5% and 2% and as of 1944 represented about 20 million dollars. Except for the Texas coyote-free area, predator control has been a "hold-the-line" proposition. This results in an annual expenditure of 3 million dollars in control costs, which yields about a million dollars in fur, while a livestock loss of 20 million is sustained. The author believes that coyotes can be eliminated, and that this would be proper and profitable on selected livestock and game ranges. However, coyote-livestock-rodent-game relationships are so complicated the the wisdom of general elimination of the coyote is debatable.--Lloyd W. Swift

ROBINSON, WELDON B. Thallium and compound 1080 impregnated stations in coyote control. The Journal of Wildlife Management 12(3): 279-295. July 1948.

Coyote control on many stock ranges is handicapped by poor control in the winter. To remedy this experiments were begun in 1937 by the U. S. Biological Survey. Most of the areas chosen for experimentation were lambing gounds. Thallium was used at a large number of stations in Wyoming and Colorado between 1937 and 1945; 1080 was used in Colorado, Idaho, and Nevada from 1945 to 1947. The stations were usually the carcass of a sheep or horse impregnated with poison and placed in coyote runways late in the fall. The stations were completely destroyed in the spring. Sheepmen's reports indicated 75% or more reductions in losses. Many dead coyotes were found. Most of the mortality from poisoned carcasses appeared to be in coyotes and magpies. That 1080 is more toxic to canines than to most other birds and mammals has been shown by extensive toxicological studies. To protect mammals other than coyotes it is necessary to have the stations outside forests, away from streams, and 6-10 miles apart. There is some danger of secondary poisoning and there are other serious handicaps; but so far 1080-impregnated carcasses are the most economical means of coyote control in regions largely inaccessible in the winter.

WHITLOCK, S. C. Identification of wolf, coyote, dog. Michigan Conservation 17(10): 6-7,15, illus. October 1948.

Law enforcement officers frequently have to decide whether an animal brought in for bounty payment is a wolf, a coyote, or a dog. A decision is very difficult or impossible when the animal is a hybrid. Identifying characteristics (underfur, tail, ears, toes, teeth, skull, weight, and length) are compared in text, photos, and diagrams.--M. Alberts

MAMMALS--FURBEARERS (RACCOON, ETC.)

DOZIER, HERBERT L. A new eastern marsh-inhabiting race of raccoon. Journal of Mammalogy 29(3): 286-290, illus. August 1948.

The author describes Procyon lotor maritimus as a new subspecies. It is found only in marsh areas east of Chesapeake Bay in Delaware, Maryland, and Virginia. It is locally called marsh coon. Opinion of most local marsh owners and coon hunters is that it is a serious enemy of the muskrat.

IVEY, R. DeWITT. The raccoon in the salt marshes of northeastern Florida. Journal of Mammalogy 29(3): 290-291. August 1948.

Data collected during 1946 and 1947 revealed that "Salt marsh raccoons take advantage of the abundant food supply exposed on mud banks, beaches, and stream bottoms at low tide. This food is composed primarily of crustaceans and molluscs. With food so readily available, raccoons apparently become adapted to a specialized schedule which consists of activity at low tide and inactivity at high tide, almost without regard for day or night." "During high tide, the animals were discovered using special beds located as far as a mile from the nearest dry land."--Lloyd W. Swift.

STUEWER, FREDERICK W. Artificial dens for raccoons. The Journal of Wildlife Management 12(3): 296-301, illus. July 1948.

In 1940 the author erected in Michigan 15 artificial den boxes that were kept under observation for 7 years. During the first 2 years they were not used, but in the 6th year 2 had litters and 1 was occupied by a lone adult. Small wooded areas with many good dens appear to serve animals that are active over extensive contiguous territory.

WRIGHT, BRUCE S. Survival of the northeastern panther (Felis concolor) in New Brunswick. Journal of Mammalogy 29(3): 235-246, illus. August 1948.

In addition to a review of published material on the occurrence of the panther in New Brunswick, 43 recent sight records and track reports are given. It is concluded that the species formerly thought extinct, but always rare, now occurs in distinct groupings in 3 major areas. It seems to be in a state of equilibrium with its environment since it has persisted without any noticeable changes in numbers. There is no record of conflict with domestic livestock. Absolute protection is suggested.--Lloyd W. Swift.

MAMMALS--RODENTS

(See also MAMMALS--BIG GAME, Costley & others; BIRDS--HAWKS & OWLS, Stickel & Stickel; VEGETATION--WILDLIFE PLANTS, Curtis; Cypert & Webster)

BATCHELDER, CHARLES FOSTER. Notes on the Canada porcupine. Journal of Mammalogy 29(3): 260-268. August 1948.

Most of the notes are on the activities of a single female at Peterborough, New Hampshire during the years 1929 to 1933. They include observations on her voice and senses and general observations on porcupine food.

MAMMALS--RODENTS--Continued

BRITTAN, MARTIN R. The chipmunks of the Yosemite region. Yosemite Nature Notes 27(7): 92-97, illus. July 1948.

7 species of chipmunks live in the region, each in a distinct habitat. The author describes them, showing their differences in drawings.

DAVIS, DAVID E. The survival of wild brown rats on a Maryland farm. Ecology 29(4): 437-448, illus. October 1948.

On a horse farm near Baltimore a study was made in 1946 and 1947 of the length of life of brown rats. Rats were abundant in all buildings. There was abundant food and a moderate number of enemies. 1036 rats were marked, and 366 were recaptured. About 5% of the rats lived as long as one year. Adult females lived longer than adult males.

DAVIS, DAVID E.; EMLEN, JOHN T., JR.; and STOKES, ALLEN W. Studies on home range in the brown rat. Journal of Mammalogy 29(3): 207-225, illus. August 1948.

Authors' summary:"In order to determine the home range of brown rats, individuals were captured alive, marked, released, and then recaptured. The experiments were conducted in urban areas in Baltimore and also on a farm." "Studies of the rate of increase of colonies of rats indicate that immigration is a minor factor in repopulation of an area. Surveys of rat signs in blocks show that colonies of rats live in definite areas of seldom more than one hundred feet in diameter. Tracks of individual rats in fresh snow seldom extend more than that distance in any direction. Although rats cross alleys, they seldom cross streets." "Because rats travel along narrow runways it is difficult to measure the area of home range. These studies indicate that rats seldom travel more than 100-150 feet. The extent of movement is probably largely dependent upon the distribution of food and harborage. Radical changes in the environment may cause extensive movements of individual rats." --Lloyd W. Swift.

EMMONS, C. W., and ASHBURN, L. L. Histoplasmosis in wild rats. Public Health Reports 63(44): 1416-1422, illus. October 29, 1948.

"Typical strains of Histoplasma capsulatum have been isolated from 16 feral rats (Rattus norvegicus) and one mouse (Mus musculus) trapped in Loudoun County, Virginia. No association was observed between these rodent cases and the previously reported human cases of the disease in this area." "It is suggested that the frequent occurrence of H. capsulatum in the common brown rat may be important in the endemicity of histoplasmosis in many widely separated areas of the world."

HILL, ELMER L., and MORLAN, HARVEY B. Evaluation of county-wide DDT dusting operations in murine typhus control. Public Health Reports 63(51): 1635-1653, illus. December 17, 1948.

"In an area where the probability of rural residents acquiring murine typhus fever was equal to or greater than that for urban residents, it was found possible to control this disease on a county-wide basis." 10% DDT in pyrophyllite was applied to rat (predominantly Rattus rattus) runs and harborages throughout Thomas and Brooks Counties, Georgia in 1946 and 1947. In the absence of other control measures there was a significant reduction in human murine typhus fever. This was substantiated by comparisons with data from untreated Grady County. Dusting operations disturbed the normal ecology of rat and rat ectoparasite populations.

MAMMALS--RODENTS--Continued

KALMBACH, E. R. Rodents, rabbits, and grassland. Pages 248-256 in "Grass; the yearbook of agriculture, 1948." Superintendent of Documents, Washington 25,D. C. 1948. $2.00.

Prairie dogs, ground squirrels, pocket gophers, and kangaroo rats are the principal rodents associated with range deterioration. Together with rabbits, they appear to be doing the most damage on ranges already depleted by livestock. The economics of rodent control on highly developed agricultural lands is usually plain. It is much more complex on open range lands.

MURIE, ADOLPH, The mysterious mouse. Audubon Magazine 50(4): 202-210, illus. July-August 1948.

The author gives a delightful account of the habits of the Toklat vole, Microtus miurus oreas. Especially interesting is the fact that they stack and cure hay for winter food, and construct tunnels in such a manner as to evade weasels.--M. Alberts.

SCHEFFER, THEO. H. Mound construction of the pocket gopher. The Murrelet 29(1): 9-10, illus. January-April 1948.

The author describes various types of gopher mounds, all with the same unity of plan. The work of gophers contributes to soil formation and distribution.--M. Alberts

SOWLS, LYLE K. The Franklin ground squirrel, Citellus franklinii (Sabine), and its relationship to nesting ducks. Journal of Mammalogy 29(2): 113-137, illus. May 1948.

The study was conducted at Delta, Manitoba, during the years 1938,1939, and 1940. In addition to predation, information is presented on distribution and habitat, population density and cycles, life history, and the Franklin ground squirrel's role as a prey species. The Delta Marsh was regarded as favorable habitat for the species, and 1938 was believed to be a period of peak population. Of 206 duck nests under observation, 126, or 62%, were within the habitat of the Franklin ground squirrel. 25, or 19%, of the nests were destroyed by squirrels. The author states that the Delta conditions in the 3 years of the study ".....apparently offered ideal conditions for maximum destruction." and concludes that ".....predation upon duck nests is a local problem in certain places at certain times." Ground squirrel control is considered and dismissed as too costly and too harmful to other animals in wild marsh areas.--Lloyd W. Swift.

STICKEL, LUCILLE F. Observations on the effect of flood on animals. Ecology 29(4): 505-507. October 1948.

The author reports on the effects of a short-duration flood on the Patuxent River bottomland, Maryland in July 1945. Collecting of wood mice (Peromyscus leucopus) and box turtles (Terrapene carolina) before, during, and after the flood showed that "The flood had little or no effect on the size of the populations, and individuals showed remarkable ability to remain within their home ranges despite the flood."

MAMMALS--RABBITS
(See MAMMALS--BIG GAME, Costley & others; MAMMALS--RODENTS, Kalmbach)

MAMMALS--INSECT-EATERS

QUAY, W. B. A technique for the automatic color marking of shrews. Journal of Mammalogy 29(3): 225-234, illus. August 1948.

MAMMALS--MARINE

BONNOT, PAUL, and RIPLEY, WM. ELLIS. The California sea lion census for 1947. California Fish and Game 34(3): 89-92, illus. July 1948.

Sea lions at the beginning of the past century lived in great herds along the California coast, but due to intensive hunting they were nearly exterminated by the end of the century. Because of the reduced numbers the seal hunters moved to better fields and the herds increased again. The censuses for the past 2 seasons have been taken from the air. The sea lion population has remained fairly stable during the past 20 years. The average for the 5 previous surveys is a little over 7,000. A table compares the population on the coast of California for the years 1927, 1928, 1930, 1936, 1938, and 1947.--M. Alberts.

EAST, BEN. Seal management has paid dividends. Animal Kingdom 50(6): 188-194, illus. November-December 1947.

The Pribilof Islands in Bering Sea are noted for their fur seals. When the islands were discovered there was an estimated population of at least 4 millions. They were down to 125,000 in 1911. Since then, under careful regulation, they have increased to 3 millions. Only 3-year-old bachelor bulls are taken.

BIRDS--BEHAVIOR
(See also BIRDS--UPLAND GAME (PHEASANT), Wadkins)

ALLEN, ARTHUR A. A new light dawns on bird photography. The National Geographic Magazine 93(6): 774-790, illus. June 1948.

The author explains the use of the speed-flash camera in catching and recording birds in action. Pictures were taken at 1/5000 second and because of this great speed many difficulties had to be overcome. For example, the release had to be pressed before the bird was in the desired spot in order not to get a blank or just the bird's tail as it passed. The accompanying photographs are excellent.--M. Alberts.

ODUM, HOWARD T. The bird navigation controversy. The Auk 65(4): 584-597. October 1948.

The author discusses the experiments of Yeagley on the homing of pigeons and of Griffin and Hock with gannets released and followed by airplane and concludes that there is not yet sufficient evidence that birds are oriented in their travels by sensitivity to either the motion of the earth's rotation or the earth's magnetism. He considers that the homing of birds from territory new to them is of a speed and nature that supports the hypothesis that they wander until known visual references are located.--John W. Aldrich.

BIRDS--COMMUNITIES

STEWART, ROBERT E. The ecological distribution of birds. Maryland Naturalist 18(2): 23-29, illus. Spring 1948.

The author lists 8 major regions of the world which are characterized by certain predominating groups of endemic plants or animals. "Within each realm, plants and animals may be found associated in an orderly pattern of biotic communities which are distributed in such a way as to indicate that climatic conditions are of paramount importance as a governing influence. Every climatic zone has characteristic associations of plant and animal life which comprise a distinct composite community." Population studies at the Patuxent Research Refuge, Maryland, showed distinct bird types corresponding to distinct forest types.--M. Alberts.

BIRDS--FAUNAS & MANUALS

BOND, JAMES. Field guide to birds of the West Indies; a guide to all the species of birds known from the Greater Antilles, Lesser Antilles and Bahama Islands. 257 pages, illus. The Macmillan Co., New York. 1947. $3.75.

Most of the book is comprised of descriptions that emphasize diagnostic characters and include ranges and local names. There are more than 200 line drawings by Earl Poole and there are indexes to both local names and the accepted common names.

GLANDON, MR. and MRS. EARL W. Birds of the Stapleton area of Nebraska. The Nebraska Bird Review 16(1): 1-21. January-June 1948.

This annotated list of approximately 250 species covers all of Logan County and part of Lincoln County. It is based on more than 30 years of study.

GRISCOM, LUDLOW, and FOLGER, EDITH V. The birds of Nantucket. 156 pages, illus. Harvard University Press, Cambridge, Mass. 1948. $3.25.

"This is the first of a series of faunal studies from areas of Massachusetts which are of exceptional interest for the variety and abundance of their bird life and the excellence of the historic record....." The introduction contains brief summaries of climatic factors, history, land bird migrants, changes in bird life, and bird problems. A well-annotated list of birds takes up the greater part of the book. There is a map of Nantucket, several attractive photos (mostly by Cruikshank), and a bibliography of more than 100 titles. A review by Frederick C. Lincoln is on page 194 of the Wilson Bulletin for September 1948.

BIRDS--FOOD

HARTLEY, P. H. T. The assessment of the food of birds. The Ibis 90(3): 361-381, illus. July 1948.

The author concludes that (1) there is little quantitative information on the food of birds, (2) a variety of materials may be used in food studies, (3) sampling in many studies has been inadequate, (4) there is no one ideal method of assessment, (5) published records should be in shape for correlation with results of other studies, and (6) lack of fundamental ecological knowledge prevents pronouncements on the status of most species.

BIRDS--MORTALITY

TICEHURST, N. F., and HARTLEY, P. H. T. Report on the effect of the severe winter of 1946-1947 on bird-life. British Birds 41(11): 322-334. November 1948.

The article summarizes the weather, the list of observers, the effects, and the species affected. A good many birds were found dead, and the numbers of many species were conspicuously reduced. Many unusual feeding habits were reported. Movements in response to weather were conspicuous.

BIRDS--POPULATIONS

RAND, A. L. Probability in subspecific identification of single specimens. The Auk 65(3): 416-432. July 1948.

Individual variation regularly occurs within subspecies and sometimes is so great that a substantial number of individuals of one form are indistinguishable from another form if found together during migration. No attempt is made to minimize the importance of geographic variation because of its important relation to speciation, but caution is recommended in identifying individuals as belonging to a subspecies which is outside of its normal range without taking into consideration the probability of its being an extreme variant of the normal population in that locality at that time of year. --John W. Aldrich.

BIRDS--VALUES

PETERSON, ROGER TORY. Birds over America. 342 pages, illus. Dodd, Mead & Co., New York. 1948. $6.00.

The 25 essays, based on the author's experiences, are a good picture of what birds and birding mean to many Americans. The book is beautifully illustrated with more than 100 photos--the author's choice of his many pictures.

BIRDS--WATERFOWL

(See also WILDLIFE (GENERAL)--MANAGEMENT, Provost; WILDLIFE (GENERAL)--POPULATIONS, Perry; BIRDS--UPLAND GAME (GENERAL), Jull)

ADDY, C. E., and MacNAMARA, L. G. Waterfowl management on small areas. 84 pages, illus. Wildlife Management Institute, Washington 5, D. C. 1948.

The aim of this booklet is to stimulate and direct sportsmen in restoring and improving waterfowl habitat. There are 2 parts. The first deals with ponds and marshes as waterfowl habitat. It outlines the important environmental conditions and tells how to manage ponds by controlling water levels, by planting, and by controlling weed growth, rough fish, livestock, erosion, and predators. The second part tells how to build ponds and lakes. Throughout there are detailed directions by word and pictures.

ATWOOD, EARL L. Goose management at Kentucky Woodlands National Wildlife Refuge. The Kentucky Warbler 24 (2): 23-27. April 1948.

This refuge was established in 1938 between the lower Tennessee and Cumberland Rivers. Ducks responded quickly to the shallow impoundments that covered 300 acres by 1941. Goose use began in 1940 with a decoy flock of 8 crippled Canadas and has grown more slowly. Since 1940 increasingly large acreages of winter small grains and legumes have been planted, the decoy flock has been increased, and more and more geese have wintered. On February 28, 1948 there were on the refuge 475 wild Canada geese.

BIRDS--WATERFOWL--Continued

BARNES, WM. B. Unusual nesting behavior of a wood duck. The Auk 65(3): 449. July 1948.

It is believed that failure of downy young wood duck to leave an artificial nest box was because the inner surface of the yellow poplar lumber used for construction did not afford enough rough surface for the ducklings to climb out.--John W. Aldrich.

BORELL, A E. Five-year take record on a New Mexico duck marsh. The Journal of Wildlife Management 12(3): 328-330. July 1948.

In spite of some improvement in food and water each year from 1943-44 to 1946-47 there was a decline in take on this 60-acre tract in Socorro County, New Mexico. An increased take in 1947-48 appeared to be due to improved environment and to a greater number of ducks in the area.

CAMPBELL, JAMES W. The food of some British wildfowl. The Ibis 89: 429-432. July 1947.

The author presents data for several species that occur also in North America: white-fronted goose, mallard, gadwall, shoveler, greater scaup, golden-eye, old-squaw, common eider, and red-breasted merganser.

CARTWRIGHT, B. W. The western Canadian waterfowl-breeding grounds. Transactions of the Thirteenth North American Wildlife Conference. Pages 63-68. 1948.

In the prairie region conditions favoring waterfowl production vary from year to year and place to place. In recent years the most dependable production has been in the parkland, north of the prairie. Still further north, many waterfowl are scattered over the vast forest and tundra regions. The author reviews conditions, beginning with the widespread hatch failure, due to bad weather, in 1945. The great reproductive capacity of waterfowl makes a quick recovery possible after depressions in population that are beyond man's control. Ducks Unlimited's appraisal of the duck population on the basis of late spring reports from more than 400 long-time observers gives a broad picture of conditions.

COOKE, R. Bird life on the Pett Level floods, 1941-1943. British Birds 41(3 and 4): 66-70, 105-112. March and April 1948.

During the summer of 1940 about 1000 acres of marshland at Pett Level, Sussex was flooded, mainly by letting in the sea through gaps in the sea-wall. Thus it reverted to something like its primitive condition. A few ducks and shorebirds had used the area all along; but following the flooding teal, wigeon, pintail, shoveler, tufted duck, great crested grebe, black, common and little terns, and herring gulls all nested for the first time on record. A variety of ducks used the area during the winters.

DAY, ALBERT M. Long-range management for waterfowl. Transactions of the Thirteenth North American Wildlife Conference. Pages 74-81. 1948.

Waterfowl needs are being neglected by the Federal Government, the state game departments, and the general public. There should be better law enforcement, more habitat preservation and improvement, adequate checking of waterfowl bags, and a better understanding of conditions by hunters. The author describes recent accomplishments arising from cooperation between organizations interested in waterfowl.

BIRDS--WATERFOWL--Continued

EATON, S. W. Bird distribution along the Peace, Slave and Little Buffalo Rivers of Canada. The Auk 65(3): 345-352, illus. July 1948.

Birds seen in 1940 from canoe or on short morning excursions from camp included relatively few ducks and geese, indicating that the large rivers north and west of Lake Athabasca do not harbor many waterfowl during June and July. The only concentration of ducks noticed was a flock of about 300 male mallards in eclipse plumage on a broad expanse of the Peace River just above Vermilion Falls near Red River Post. There were a few American golden-eye females with broods on the Peace and Slave Rivers and a female buffle-head with 6 young on Little Buffalo River. Several female baldpates and mallards were seen on the rivers, but no young. On the Peace River was an old Canada goose with one young, and on the Little Buffalo 3 family parties of Canada geese.--John W. Aldrich.

GRIFFITH, RICHARD. Improving waterfowl habitat. Transactions of the Thirteenth North American Wildlife Conference. Pages 609-617. 1948.

The author discusses the complexities of providing cover and food for waterfowl in areas subject to complete or partial control. Managing reservoirs for the production of food and cover and best utilization by waterfowl, controlling grazing, and limiting the growth of undesirable marsh plants by burning and chemicals are some of the problems discussed. "To date no technique or combination of methods has been developed that has proved to be an effective substitute for the high degree of productivity which occurs on natural breeding grounds protected from intensive agricultural use."

HALLER, FRANK D. Waterfowl hunting at Hovey Lake. Outdoor Indiana 15(4): 2-3, illus. April 1948.

For many years Hovey Lake in southwestern Indiana has wintered thousands of waterfowl. In 1939 the state bought this 900-acre area. It is half refuge, half public shooting ground. Records of kill were kept during the past 5 years. The author compares the kills in 1945, 1946, and 1947, and analyzes the data collected in 1947.

HEIT, WILLIAM S. Texas coastal waterfowl concentration areas and their 1947-48 wintering population. Transactions of the Thirteenth North American Wildlife Conference. Pages 323-338, illus. 1948.

The wintering range has 2,350,000 acres of waterfowl habitat plus 500,000 acres of rice. There are half a dozen major concentration areas. A January aerial census showed a million and a half ducks and more than 300,000 geese. Among ducks, pintails totaled nearly 900,000; redheads were next with 280,000. "Availability and abundance of food influenced duck movement more than gunning pressure." "Geese were more susceptible to population shift due to hunting pressure. Large ranches and land holdings are responsible for protection and preservation of remaining wintering grounds."

BIRDS--WATERFOWL--Continued

HENRY, C. J. Summer on the Souris Marsh. Audubon Magazine 50(4): 241-249, illus. July-August 1948.

"Before their drainage some thirty odd years ago, the Souris Marshes were unsurpassed as a haven for marsh birds, and the tales by the early settlers of these concentrations are almost more than the mind can grasp." Restoration of the marshes was begun in 1935 by the U. S. Fish and Wildlife Service. Since then the wildlife has gradually reestablished itself. --M. Alberts.

HOCHBAUM, H. ALBERT. Harvesting the waterfowl crop. Transactions of the Thirteenth North American Wildlife Conference. Pages 481-491. 1948.

The author explains in detail how in the past 2 decades wildfowling has deteriorated in skill and manners. He emphasizes the need for knowing the size of populations of different species and for knowing the size of the harvest and the composition of the kill as to kinds, ages, and sexes. There is ".....a serious lack of knowledge regarding the fundamentals of waterfowl life history, ecology, and management." "The real and pressing problem today in waterfowl conservation is the management of man himself, the management of the harvest."

HÖHN, E. O. Mortality of adult and young mallards. British Birds 41(8): 233-235. August 1948.

The author analyzed recovery data on birds ringed up to 1946 and found a notable difference in length of survival of birds ringed as adults or as young. Recoveries of 305 adults showed an average length of survival of 1 year and 2 months. Recoveries of 828 young showed an average length of survival of $4\frac{1}{2}$ months. The mortality was almost entirely due to shooting.

HOPKINS, RALPH C. Report to Wisconsin duck hunters. Wisconsin Conservation Bulletin 13(9): 3-8. September 1948.

Hunting pressure on locally-raised ducks in Wisconsin must be reduced. In 1947 100% check of hunters at Horicon Marsh indicated that the kill there consisted largely of Wisconsin-produced birds. ".....Wisconsin marshes, lakes, and streams are producing something less than one-third of their potential." The answer to this problem seems to be to save more breeding stock by curtailing the kill before the height of migration.--M. Alberts.

MARLER, GEORGE. Is the trumpeter swan to remain only a refuge bird? National Parks Magazine 22(95): 22-25, illus. October-December 1948.

It is estimated that by 1952 Red Rock Refuge, Montana will be supporting its maximum number of swans. Human activity is preventing nesting on several lakes between Red Rock Refuge, Montana and Yellowstone Park. "The trumpeter swan problem can be solved, lastingly, only by public education."

MARTIN, GLENN L. What can be obtained by cooperation between all waterfowl-conservation bodies? Transactions of the Thirteenth North American Wildlife Conference. Pages 82-83. 1948.

The author proposes a liaison of waterfowl-conservation organizations to tell the people of the country about waterfowl conditions. At present they are given poor and often conflicting information.

BIRDS--WATERFOWL--Continued

McNEIL, CHARLES W. A preliminary survey of parasites of eastern Washington waterfowl. The Murrelet 29(1): 2-4. January-April 1948.

22 waterfowl, mostly mallards, were examined in the fall of 1946; 40 waterfowl, about half mallards, were examined in the fall of 1947. Most of the mallards and about half of the other 9 species were parasitized. Tapeworms and flukes were the commonest parasites. Birds with many parasites appeared to be healthy.

SMITH, ROBERT H., and HAWKINS, ARTHUR S. Appraising waterfowl-breeding populations. Transactions of the Thirteenth North American Wildlife Conference. Pages 57-62. 1948.

The authors outline a plan for a standard appraisal of breeding grounds that was first used extensively in 1947. This is a sampling process, not a total count. It is believed to be the best method for inventorying waterfowl.

SOPER, J. DEWEY. Canada looks at waterfowl. Transactions of the Thirteenth North American Wildlife Conference. Pages 52-56. 1948.

Canada's greatest waterfowl production is in the southern two-thirds of the 3 Prairie Provinces. Encroachment of agriculture has decreased the primitive breeding area; and drought, increasing human population, and other factors have directly decreased the waterfowl population. It can never be the same again. More and better information needs to be disseminated about current game conditions. The author describes waterfowl conditions across Canada in 1947.

THOMPSON, DAVID H., and JEDLICKA, JOHN. A method for correcting kill estimates from waterfowl banded during the hunting season. The Journal of Wildlife Management 12(4): 433-436, illus. October 1948.

TINNEY, WILLIAM E. The river: the tidewater Hudson, from the Troy dam to the Atlantic. New York State Conservationist 3(1): 3-5, illus. August-September 1948.

The Hudson is an outstanding producer of shad, striped bass, and carp, and contains several other species of value in sport or commercial fishing. It is one of the 6 major duck areas of New York state, and is currently being studied as a guide to future waterfowl management.

WILLIAMS, C. S., and others. Waterfowl populations and breeding conditions, with notes on woodcock studies--summer 1948. U. S. D. I., Fish and Wildlife Service; and Canada Dept. of Mines and Resources, Dominion Wildlife Service, Special Scientific Report No. 60. 186 pages, illus. December 1948.

This compilation of reports covers conditions from Alaska to Labrador, south to Utah, Nebraska, and New York. It is the work of representatives of the U. S. Fish and Wildlife Service, Dominion Wildlife Service, Wildlife Management Institute, National Audubon Society, University of British Columbia, and the governments of Alaska, Utah, and New York. The authors are Robert P. Allen, F. Graham Cooch, I. McT. Cowan, Wilfred Crabbe, Walter F. Crissey, Floyd H. Davis, Richard E. Griffith, Arthur S. Hawkins, Oliver H. Hewitt, G. H. Jensen, Howard L. Mendall, J. A. Munro, Nolan Nelson, D. H. Pimlott, Robert F. Scott, Allen G. Smith, Robert H. Smith, J. Dewey Soper, Jerome Stoudt, C. S. Williams, and Bruce S. Wright.

BIRDS--WATERFOWL--Continued

WILSON, CHESTER S. The states' job in migratory-bird management. Transactions of the Thirteenth North American Wildlife Conference. Pages 69-73. 1948.

The states should do a great deal of work in education, observation, habitat improvement, and regulation, leaving the Fish and Wildlife Service relatively free to direct and coordinate the program.

WRIGHT, BRUCE S. Waterfowl investigations in eastern Canada, Newfoundland and Labrador, 1945-1947. Transactions of the Thirteenth North American Wildlife Conference. Pages 356-364. 1948.

The first step in this investigation was a study of the ecology of the local breeding ducks of an area of more than 30,000 acres on the St. John River estuary in New Brunswick. As a result of this and more extensive work the author concludes that there is in the region ample habitat for many more breeders; that predation losses do not appear excessive; and that spring muskrat trapping, spring shooting, and floods are the main mortality factors. Several important questions remain at least partially unanswered.

BIRDS--FISH-EATERS
(See also BIRDS--WATERFOWL, Cooke)

ALEXANDER, W. B. The index of heron population, 1947. British Birds 41(5): 146-148. May 1948.

158 heronries were reported in 1947(13 less than in 1946). The decrease from 1946 in 104 heronries in which the population is known for one or more normal years was 40%.

ALLEN, ARTHUR A. Sea bird cities off Audubon's Labrador. The National Geographic Magazine 93(6): 755-774, illus. June 1948.

The author gives an account of his recent trip for the National Geographic Society to photograph in color the sea birds on islands in the Gulf of St. Lawrence. Some of the birds discussed are gannets, murres, cormorants, and puffins. The color photographs are outstanding.--M. Alberts.

DAVIES, O. J. H., and KEYNES, R. D. The Cape St. Mary gannet colony, Newfoundland. The Ibis 90(4): 538-546, illus. October 1948.

More than 4000 pairs occupied this colony in 1939. Attempts at nesting on the mainland have not been successful. Persecution by fishermen is the chief cause of mortality.

RANKIN, M. NEAL, and DUFFEY, ERIC A. G. A study of the bird life of the North Atlantic. British Birds 41(supplementary number): 1-42, illus. July 1948.

This article is based mostly on the authors' 28 crossings (routes mapped) which were made mainly in 1943-44. From May 1943 to April 1945 one or the other was at sea during every month but February 1944. All crossings were in convoys that followed zigzag courses. Many observations were made from the air. The principal habitats were inshore, offshore, and pelagic. 30 species are discussed, with the aid of 18 distribution maps.

BIRDS--SHOREBIRDS

ALEXANDER, W. B. The woodcock in the British Isles. The Ibis 87: 512-550, 88: 1-34, 159-179, 271-286, 427-444; and 89: 1-28, illus. October 1945--January 1947.

Scolopax rusticola breeds clear across northern Eurasia. The author discusses breeding occurrence, several aspects of breeding biology, movements, and winter distribution. Breeding and winter occurrence are tabulated in great detail and are clarified by maps. The information is based on nearly 1000 returns from a questionnaire submitted in 1934-35. Considerable information on behavior may be gleaned from the wealth of data presented. There is a list of about 200 references.

HALL, HENRY MARION. Woodcock ways. 84 pages, illus. Oxford University Press, New York. 1946. $6.50.

This entertaining book, based on the experiences of the author, contains a great deal of natural history. At least 3 chapters discuss ecology and management: "VI. Why the woodcock merits special protection."; "XI. Are there enough woodcock to justify gunning?"; and "XXIII. Ecology and conservation."

KNIGHT, JOHN ALDEN. Woodcock. 161 pages, illus. Alfred A. Knopf, New York. 1944. $4.00.

A book for hunters; with a good summary of woodcock natural history.

MILLER, J. ROBERT and JEAN T. Nesting of the spotted sandpiper at Detroit, Michigan. The Auk 65(4): 558-567, illus. October 1948.

In 1947 the authors found 43 pairs of spotted sandpipers nesting on 17.6 acres of dry meadow on Belle Isle, Detroit, Michigan. Of 35 nests, 25 were successful. Information is given on nest location and construction, territorialism, and other behavior.

BIRDS--UPLAND GAME (GENERAL)
(See also VEGETATION--WILDLIFE PLANTS, Hungerford; Miller, Ball & Knott)

JULL, MORLEY A. Raising turkeys, ducks, geese, game birds. 467 pages, illus. McGraw-Hill Book Co., New York. 1947. $3.75.

Chapter 12, on raising and conserving game birds, has a section on the conservation of wild upland game and waterfowl. Each chapter has a clearly expressed, tabular summary.

POUGH, RICHARD H. The arguments against the annual stocking of already inhabited coverts with artifically reared game birds. Transactions of the Thirteenth North American Wildlife Conference. Pages 228-235. 1948.

BIRDS--UPLAND GAME (BOBWHITE)
(See also WILDLIFE (GENERAL)--POPULATIONS, Macias; WILDLIFE (GENERAL)--STOCKING, Lehmann; VEGETATION--WILDLIFE PLANTS, Davison)

BARNES, WM. B. The distribution of Indiana's bobwhite quail. Outdoor Indiana 14(7): 3-6, illus. October 1947.

A map shows the zoogeographic regions of the state. Each of these 11 regions is described with respect to general conditions and bobwhite status. Another map of the state shows the average kill per hunter per season between 1940 and 1945.

BIRDS--UPLAND GAME (BOBWHITE)--Continued

DAVISON, VERNE E. New techniques to increase bobwhites. Transactions of the Thirteenth North American Wildlife Conference. Pages 282-289. 1948.

Food is the first essential, and natural food is much scarcer than has been assumed. Bicolor lespedeza seed is an excellent food. Its concentrated production in one-eighth acre strips has kept covies in one place through the winter and has multiplied their numbers. "High, dependable populations of quail can be produced economically as a primary objective of land management. This appears more promising than restoration as a by-product of cropland, woodland, or pasture."

REEVES, M. C. Tractor vs. quail. Outdoor Indiana 15(6): 14-15, illus. June 1948.

If quail are to continue as a game bird there must be definite management of cover to offset the effects of the use of modern farm machinery.

SCHULTZ, VINCENT. Vitamin A as a survival factor of the bobwhite quail (Colinus v. virginianus) in Ohio during the winter of 1946-47. The Journal of Wildlife Management 12(3): 251-265, illus. July 1948.

62 bobwhites were collected from glaciated western and northern Ohio, 52 from unglaciated southeastern Ohio. Body weights and liver weights were greater from the glaciated region; but total vitamin A stored by individuals from the 2 regions did not differ significantly. The vitamin A activity of 4 quail foods (Polygonum pennsylvanicum, Lespedeza stipulacea, Ambrosia artemisiaefolia, and Zea mays) showed no linear relationship to time. Vitamin A deficiency did not appear to be a limiting factor of bobwhite during the winter of 1946-47 in Ohio.

BIRDS--UPLAND GAME (PHEASANT)

BACH, ROY N. The effect of sexidiscriminate harvest on the coefficient of reproduction in pheasants. Transactions of the Thirteenth North American Wildlife Conference. Pages 521-525, illus. 1948.

This article presents the mechanics of the idea that "....the disturbance of natural or normal one-to-one sex ratios of the breeding stock of certain polygenous species will result in a modified capacity for reproduction....."

DAMBACH, C. A., and LEEDY, D. L. Ohio studies with repellent materials with notes on damage to corn by pheasants and other wildlife. The Journal of Wildlife Management 12(4): 392-398, illus. October 1948.

Experiments with repellents gave unsatisfactory results with caged birds and in field trials. "Shelled corn when scattered around the field margin in a narrow trail a day or more before the corn emerged from the ground gave fairly satisfactory results." "Pheasant damage is local and in some instances results in serious losses. All of the serious losses investigated occurred adjacent to or in refuge areas." "Throughout the pheasant belt as a whole, damage to planted corn by pheasants is negligible."

BIRDS--UPLAND GAME (PHEASANT)--Continued

GINN, WM. E. Pheasants in the rain. Outdoor Indiana 15(5): 4-5, illus. May 1948.

In Indiana, since 1940, the pheasant kill per hunting effort was higher each year that had low total rainfall from April through July.

GINN, WM. E. Ring-neck becomes naturalized. Outdoor Indiana 14(4): 16-17, illus. July 1947.

A review of the history of pheasant introduction in Europe and United States, with maps showing the original Asiatic range of Phasianus colchicus, torquatus, and versicolor and the 1941 range of the ring-neck in North America.

KABAT, CYRIL, BUSS, IRVEN O.; and MYER, ROLAND K. The use of ovulated follicles in determining eggs laid by the ring-necked pheasant. The Journal of Wildlife Management 12(4): 399-416, illus. October 1948.

KIMBALL, JAMES W. Pheasant population characteristics and trends in the Dakotas. Transactions of the Thirteenth North American Wildlife Conference. Pages 291-311, illus. 1948.

Population trends have been determined during the past 7 years by roadside censuses. The decline during this period was caused by low productivity, high egg mortality, or high juvenile mortality. Reproductive success was good in 1947. There is need for a coordinated regional pheasant research program.

MacMULLAN, R. A. Pheasants are coming back. Michigan Conservation 17(10): 3,13, illus. October 1948.

Counts this year show a one-fifth to one-third larger hatch than in 1947. However, the population does not always depend upon the hatch--the weather conditions are an important factor also.--M. Alberts

McCLURE, H. ELLIOTT. Factors in winter starvation of pheasants. The Journal of Wildlife Management 12(3): 267-271. July 1948.

In 1943 pheasant winter mortality in Nebraska resulted from radical reduction of marsh, poor upland food production, and deep ice-covered snow. "Stabilized water levels in the lakes might have prevented the mortality, artificial feeding did not."

SPENCER, DON. Improving pheasant shooting by planting of feed patches. The Ohio Conservation Bulletin 12(7): 14-15,18, illus. July 1948.

The author has a commercial preserve of more than 1000 acres in Columbia County, New York. He has distributed a series of feed patches of about 1 acre each over the property. They utilize a variety of seed combinations aimed to attract both pheasants and quail. Among the plants grown are kaffir corn, milo maize, rape, millet, alfalfa, kale, brussels sprouts, broccoli, broom corn, and buckwheat. The author discusses other management practices, but he believes provision of food and cover are by far the most important.

BIRDS--UPLAND GAME (PHEASANT)--Continued

TWINING, HOWARD: HJERSMAN, HENRY A; and MacGREGOR, WALLACE. Fertility of eggs of the ring-necked pheasant. California Fish and Game 34(4): 209-216, illus. October 1948.

Game farm tests have shown that ".....one cock to 50 hens results in normal fertility of eggs." "On an area (Sartain Ranch) that received perhaps the heaviest hunting pressure in California in 1946 the cock-hen ratio dropped to 3.4 cocks to 100 hens." "Legal hunting of cocks therefore, has little effect on the field fertility of pheasants in their observed Sacramento Valley habitat."

UHLIG, HANS G. Experimental feeding of ring-necked pheasants in the Willamette Valley, Oregon. The Journal of Wildlife Management 12(3): 272-279, illus. July 1948.

55 12-weeks-old birds were put in 11 pens (cock and 4 hens in each) in mid-August 1946. Feeding experiments were carried on from November 2, 1946 to January 31, 1947. The birds survived on green herbage alone (20-27% protein); survived and increased on green herbage and weed seeds; and survived on green herbage and wheat. Wheat seemed to be preferred over weed seeds and green herbage, although the combination of weed seeds used in the experiment was of better quality for pheasant maintenance than was wheat. With limited wheat or weed seeds and abundant green herbage, the amount of green food eaten increased 3 or 4 times.

WADKINS, L. A. Dyeing birds for identification. The Journal of Wildlife Management 12(4): 388-391. October 1948.

14 dyes were tested for suitability for marking ring-necked pheasants for periods of 3 months or more. 4 dyes were chosen for use: malachite green, brilliant green, rhodamine B extra, and purple batik. They were applied in a 33% alcohol-66⅔ water solution. The dye solution was sprayed on the feathers with a hand spray gun. Rhodamine faded the least.

WESTERSKOV, K.J. Adopt those pheasants. The Ohio Conservation Bulletin 12(4): 14-15,19, illus. April 1948.

The author tells how the eggs from nests destroyed by mowing are rescued and hatched in Denmark. He believes that similar action would pay Ohio sportsmen.

BIRDS--UPLAND GAME (RUFFED GROUSE)

CHAPMAN, FLOYD B; BEZDEK, HUBERT; and DUSTMAN, EUGENE H. The ruffed grouse and its management in Ohio. The Ohio Division of Conservation and Natural Resources, Wildlife Conservation Bulletin No. 6. 24 pages, illus. November 1948.

This bulletin is intended to familiarize Ohio sportsmen and farmers with the ruffed grouse and to indicate practices that will help to preserve or restore grouse in southeastern Ohio. The authors describe the ruffed grouse's history in Ohio, distribution and abundance, life history, food habits, cover requirements, and management (increasing food supply, cover manipulation, restocking, predator control, refuges, hunting). Each of 17 management suggestions is presented through a brief statement and a drawing.

BIRDS--UPLAND GAME (RUFFED GROUSE)--Continued

HALL, HENRY MARION. The ruffed grouse. 291 pages, illus. Oxford University Press, New York. 1946. $6.50.

This book, by a hunter and for hunters, comprises original observations and experiences of the author and information from other sources. The emphasis is on hunting, but the picture is a year-around one. There is a chapter on "Preserving and attracting ruffed grouse."

KNIGHT, JOHN ALDEN. Ruffed grouse. 271 pages, illus. Alfred A. Knopf, New York. 1947. $4.50.

This is a book for hunters who care to know more about their favorite bird than can be learned afield in the fall. The author blends his experiences with the information obtained from many other hunters and biologists into an entertaining account of the bird's general characteristics, enemies, foods, cycles, behavior, management, and hunting.

TANNER, WARD D., and BOWERS, GLENN L. A method for trapping male ruffed grouse. The Journal of Wildlife Management 12(3): 330-331. July 1948.

A mirror at the back of a wire box trap was a successful decoy during the spring and fall drumming periods in central Pennsylvania.

BIRDS--UPLAND GAME (WILD TURKEY, ETC.)
(See also WILDLIFE (GENERAL)--STOCKING, Lehmann)

AMMANN, G. A. Are prairie chickens doomed in Michigan? Michigan Conservation 17(9): 3,12, illus. September 1948.

The prairie chicken was not native to Michigan, except possibly some of the southernmost counties. Their home was the plains and prairies of the Middle West, but they moved northward into Michigan as soon as clearings were created. An increase was apparent until about the 1930's. After that hunting decreased their numbers until now the figure is alarmingly low. Steps are being taken to insure their survival. Closed seasons are being enforced and have shown promise of success.--M. Alberts

DALRYMPLE, BYRON W. Forgotten game birds. Field and Stream 53(5): 58, 123-124, illus. September 1948.

The mourning dove is the third most popular game bird in the U. S. today. Usually about 26 states have open season on doves. Around 15 million mourning doves are killed each fall. The author urges protection for doves to prevent extinction. He suggests that opening seasons later in certain states might assure that no nesting birds be disturbed. Another practice he believes would be helpful is to outlaw shooting within a certain distance of waterholes. --M. Alberts.

BIRDS--UPLAND GAME (WILD TURKEY, ETC.)--Continued

GLOVER, FRED A. Winter activities of wild turkey in West Virginia. The Journal of Wildlife Management 12(4): 416-427, illus. October 1948.

This article reports on an intensive study made in the winter of 1946-47 in the mountains of eastern West Virginia. The 6 sample areas chosen were in oak-hickory-pine forest and beech-birch-maple-hemlock forest. A poor crop of acorns and deep snows from mid-January to early April led to the starving of many birds--30% to 80% in some areas. Black cherry, dogwood, witch-hazel, and greenbrier produced abundant fruit and, together with emergency feeding, helped to maintain the flocks. Predators took a few birds. Natural food plantings, spring and stream improvement, and limited winter feeding would improve winter carrying capacity.

KOZICKY, EDWARD L. Some protozoan parasites of eastern wild turkey in Pennsylvania. The Journal of Wildlife Management 12(3): 263-266. July 1948.

The author reports the occurrence of 5 protozoans. Some mortality was involved; but the effect of any of these protozoans on population levels is not known.

LEOPOLD, A. STARKER. The wild turkeys of Mexico. Transactions of the Thirteenth North American Wildlife Conference. Pages 393-400, illus. 1948.

In eastern and western Mexico the wild turkey occurs in separated areas that are remnants of a former much larger range. Its present range is shrinking steadily as a result of timber clearing and hunting. The ocellated turkey occurs in the Yucatan Peninsula, where its range has shrunk only a little since the Conquest. Its populations probably are increased by corn culture of moderate intensity.

BIRDS--HAWKS & OWLS

HAUSMAN, LEON AUGUSTUS. Birds of prey of northeastern North America. 164 pages, illus. Rutgers University Press, New Brunswick, N. J. 1947. $3.75.

The author describes the birds of prey and their habits and adds a few interesting personal observations.--M. Alberts.

SCOTT, THOMAS G. Long-eared owls and red foxes. The Auk 65(3): 447-448. July 1948.

55 long-eared owl pellets taken in January 1947 near Boone, Iowa were made up mostly of mice remains (Microtus, Reithrodontomys, and Peromyscus). About half of 21 fecal passages of red foxes, taken at the same time, was remains of cottontails, the other half principally mice, fox squirrels, and birds.

STICKEL, WILLIAM H., and STICKEL, LUCILLE F. Mammals of northwestern Texas found in barn owl pellets. Journal of Mammalogy 29(3): 291-293. August 1948.

The authors collected a large number of pellets in Wheeler County, Texas, on the eastern edge of the panhandle, on September 1, 1947. They found the bones of 14 species of mammals, remains of 1 bird, and a few long-horned grasshoppers. 4 rodents made up 75% of the total number of occurrences. The finding of Cryptotis parva extended its known range in Texas more than 200 miles.

BIRDS--HAWKS & OWLS--Continued

WILLIAMS, RALPH B., and MATTESON, CLYDE P., JR. Wyoming hawks. Wyoming Game and Fish Department, Bulletin No. 5. 84 pages. illus. 1948. $1.00.

This is a compilation of 17 articles on hawks that appeared in Wyoming Wild Life. "The information presented in Wyoming Hawks is not intended as an exhaustive study of these birds but is rather an endeavor toward the furtherance of a better understanding and easier identification of the species known to reside in or visit Wyoming." Abstracts of separate articles appeared in the following issues of Wildlife Review: 47, 51, 52, and 53.--M. Alberts.

BIRDS--SONGBIRDS

(See also VEGETATION--WILDLIFE PLANTS, Curtis; Cypert & Webster)

ERICKSON, ARNOLD B. Passerine bird populations of the Savannah River Refuge, South Carolina. The Auk 65(4): 576-584, illus. October 1948.

Bird populations were determined by weekly censuses of singing males and weekly counts of birds on certain islands and dykes and adjoining strips of marsh. The dominant marsh plants were cut grass (Zizaniopsis), maiden cane (Panicum hemitomon), pickerel-weed (Pontederia), lotus (Nelumbo), water-lily (Nymphaea odorata), jussiaea (Jussiaea leptocarpa), and alligator-grass (Alternanthera philoxeroides). Dominant trees of the islands included live oak, water oak, sweet gum, pignut hickory, hackberry, and loblolly pine. Dominant trees of the dykes were chinaberry, Chinese tallow tree (Sapium), and black willow. Bird populations of the islands were determined as 614 pairs per 100 acres, the most abundant species being red-winged blackbird, purple grackle, mourning dove, yellow-throat, orchard oriole, and cardinal. Populations of dykes and marsh, even though of strikingly different habitat, were lumped together and determined as 373 pairs per 100 acres. The large population was produced primarily by the marsh habitat with its high density of long-billed marsh wrens, yellow-throats, and red-winged blackbirds. --John W. Aldrich.

FAWVER, BEN J. Bird population of an Illinois floodplain forest. Transactions of the Illinois State Academy of Science 40: 178-189, illus. 1947.

An area of about 50 acres along the Sangamon River in Piatt County was studied in 1946 and 1947. The author presents data on forest and shrub cover, breeding bird population, size of nesting territories, winter population, etc. Repeated inundation of the floodplain is an important influence on the birds. The 5 commonest breeders of a total of 26 were cardinal, red-eyed vireo, redstart, indigo bunting, and wood pewee.

BIRDS--SONGBIRDS--Continued

GEORGE, JOHN L., and MITCHELL, ROBERT T. Notes on two species of Calliphoridae (Diptera) parasitizing nestling birds. The Auk 65(4): 549-552. October 1948.

Larvae of Apaulina metallica were found feeding on nestlings of hermit thrush, chipping sparrow, song sparrow, and redstart. Numbers of larvae varied from 2 to 6 per nest, except in the case of redstart in which 30 maggots were found. The numerous larvae feeding on the redstart were thought to be the direct cause of its death. Larvae of this species are external parasites which hide in the lining of the nest when disturbed. Larvae of Apaulina hirundo were discovered on chipping sparrow nestlings. 2 to 5 maggots were found burrowing in a variety of locations beneath the skin of each nestling sparrow. One of the more heavily infested nestlings died after going through nervous spasms.--John W. Aldrich.

LACK, DAVID. Notes on the ecology of the robin. The Ibis 90(2): 252-279, illus. April 1948.

The object of this paper on the European robin (Erithacus rubecula) ".....is to supplement and amplify existing knowledge on the natural history of the species, particularly in regard to habitat, feeding-habits and population control." It is based primarily on the author's observations.

LEMMON, ROBERT S. How to attract the birds: planting, feeding, housing. 126 pages, illus. The American Garden Guild and Doubleday & Co., Garden City, N. Y. 1947. $1.50.

MARSHALL, JOE T., JR. Ecologic races of song sparrows in the San Francisco Bay region. Part I. Habitat and abundance. The Condor 50(5): 193-215, illus. September-October 1948.

The purpose of this study is ".....to furnish more complete information..... on the habitat requirements, spatial isolation and morphologic attributes not only of the four races but of the several populations into which each race is subdivided by geographic barriers." "Eighty-nine days were spent in the field and for each locality visited there was recorded the habitat, plant species, numbers of birds, their behavior, and relations with other species." The author describes his method, and the geography, climate, salinity of bays, habitats (fresh-water marsh, stream margins, soft chaparral, seaside chaparral, brackish marsh, and salt marsh), distribution of habitats and song sparrow populations, vegetational succession and the fate of populations, limiting environmental factors, and infraspecific adaptation. The detailed descriptions of habitats vividly interrelate physical environment and plant and animal life. Maps and diagrams help in the explanation.

BIRDS--SONGBIRDS--Continued

NEFF, JOHNSON A. Protecting crops from damage by horned larks in California. U. S. D. I., Fish and Wildlife Service, Wildlife Leaflet 308. 11 pages. June 1948. Free.

The California horned lark (Otocoris alpestris actia) has caused considerable damage to crops in the interior valleys of California from San Francisco south to the Imperial Valley, and along the coastal strip from San Francisco to San Diego. "Among the vegetable crops severely damaged by horned larks are lettuce, carrots, beets, spinach, turnips, and peas. Plantlets of field and truck crops destroyed include those of black-eyed peas, beans of nearly every type, sugar beets, cantaloupes, watermelons, and tomatoes. Flower plantlets of many varieties, in commercial seed plantings, are frequently devoured." Depredations are correlated with the dry season. Various means of preventing damage have been devised but none has been wholly effective. Among them are noise-making devices, shooting or herding off, scarecrows, confetti, papers on the ground, and stakes and flags. This is a slight revision of the author's Wildlife Research and Management Leaflet BS-64, issued in September 1936 under the same title.--M. Alberts.

STEVENSON, HENRY M., and STUPKA, ARTHUR. The altitudinal limits of certain birds in the mountains of the southeastern states. The Migrant 19(3): 33-60. September 1948.

Most of the information in this article is presented in an annotated list of nearly 150 species. More than 80 other articles are cited.

REPTILES & AMPHIBIANS
(See also MAMMALS--RODENTS, Stickel)

BAILEY, REEVE M. Winter mortality in the snake Storeria dekayi. Copeia 1948(3): 215. September 1948.

A hibernating aggregation of Storeria dekayi was found in a road fill in Lee County, Iowa, on March 22, 1939. The snakes were emerging from a labyrinth of small burrows in sandy clay. The tunnels reached a depth of 18 inches and were mostly parallel to the surface. About two dozen living snakes were found in or near the burrows, and 20 dead ones were found in the burrows. The dead snakes are thought to have been winter killed, for all of them were within 10 inches of the surface. It is suggested that: (1) winter kill, if frequent, may have a controlling effect on snake populations, and (2) the habit of shallow hibernation might limit the northward spread of a species.--W. H. Stickel.

CAGLE, FRED R. The growth of turtles in Lake Glendale, Illinois. Copeia 1948(3): 197-203, illus. September 1948.

Studies were made on growth of 195 Pseudemys scripta troostii from a new artificial lake. Annual growth was determined from plastral growth rings. Data on size groups, size of melanistic males, age groups, and season growth increments are given in graphs and a table. Males usually became sexually mature at about 10 cm. and females at about 16 cm. The growth rate was similar in both sexes, so females required more seasons to reach the size necessary for maturity. Growth in both sexes slowed after maturity. The lake was first flooded and stocked with fish in 1940. Turtle growth was extremely rapid in 1940 and 1941, but declined markedly through the 5 following years.

REPTILES & AMPHIBIANS--Continued

CAGLE, FRED R. Observations on a population of the salamander, Amphiuma tridactylum Cuvier. Ecology 29(4): 479-491, illus. October 1948.
The observations reported upon were made in Audubon Park, New Orleans, between February 1946 and December 1947. More than 500 individuals were observed, of which 112 were marked and released. This salamander is abundant in Audubon Park where its activity is regulated by rainfall (only a flooding rain permits feeding). It has a high reproductive potential and few enemies.

DICKSON, JOHN D., III. Observations on the feeding habits of the scarlet snake. Copeia 1948(3): 216-217. September 1948.
Several examples are given of Cemophora coccinea entering box-turtle nests, even before oviposition, and destroying eggs. Instead of swallowing the whole egg as do most egg-eating snakes, Cemophora thrusts its head into the egg and drinks the contents, leaving the empty shell. One or two turtle eggs exhaust the snake's capacity.--W. H. Stickel.

EVENDEN, FRED G., JR. Food habits of Triturus granulosus in western Oregon. Copeia 1948(3): 219-220. September 1948.
Stomach contents of 104 T. g. granulosus were analyzed. The salamanders were collected from western Oregon trout waters in the spring of 1947. Animal material constituted 88% of the diet. A wide variety of foods, including amphibian eggs, was taken, but aquatic insects were the most important. It is believed that these salamanders compete with trout for their preferred foods.--W. H. Stickel.

GNAEDINGER, L. M., and REED, C. A. Contribution to the natural history of the plethodont salamander Ensatina eschscholtzii. Copeia 1948(3): 187-196. September 1948.
The paper is based on study of 169 specimens collected at Portland, Oregon from September 1945 to May 1946. Notes are given on habitat, numbers, size groups, growth, secondary sex characters, swimming ability, movements of transferred individuals, jumping, voice, death by freezing, regeneration of tail, number of eggs and their time of development. Animals were marked by toe clipping and by scratching symbols on the belly with a pin dipped in India ink. Ink marks remained several weeks.--W. H. Stickel.

HAMILTON, W. J., JR. The food and feeding behavior of the green frog, Rana clamitans Latreille, in New York State. Copeia 1948(3): 203-207. September 1948.
The stomach contents of 434 specimens collected throughout the season were analyzed. Field observations were made of feeding activity. It was found that the frogs feed at all hours and depend largely on vision for capture of prey. Some food seems to be taken under water. Beetles, flies, grasshoppers, and caterpillars make up 60% of the food, but other frogs are important food items to larger individuals. The food taken is largely determined by seasonal availability. The writer questions the protective value of the repugnatorial secretions of stink bugs and pickerel frogs. --W. H. Stickel.

REPTILES & AMPHIBIANS--Continued

PARKER, MALCOLM V. A contribution to the herpetology of western Tennessee. Journal of the Tennessee Academy of Science 23(1): 20-30. January 1948.

This article summarizes the author's observations in the region between the Mississippi and the lower portion of the Tennessee River from 1934 to 1941. They comprise information on the distribution and ecology of 78 species and subspecies of amphibians and reptiles.

VEGETATION--COMMUNITIES

(See also BIRDS--SONGBIRDS, Marshall; VEGETATION--HABITATS, Shimek)

BAUMGARTNER, LUTHER L. Mixed chlorophenyl allyl carbonate, a new chemical herbicide for controlling plant succession. Transactions of the Thirteenth North American Wildlife Conference. Pages 243-244. 1948.

"This chemical has demonstrated selective activity for certain grasses and for certain broadleaf plants generally resistant to 2,4-D." In one series of tests it killed bluegrass, which was replaced by ragweed. It kills cattail and young phragmites. It is not commercially available.

COTTAM, GRANT, and CURTIS, J. T. The use of the punched card method in phytosociological research. Ecology 29(4): 516-519. October 1948.

Its use is practically limitless. The most important principle is the necessity of establishing a code. The article has a useful list of references.

KÜCHLER, A. W. A new vegetation map of Manchuria. Ecology 29(4): 513-516, illus. October 1948.

Resemblance between the vegetation of Manchuria and parts of United States makes this map and the accompanying discussion of interest and use in this country.

McLEAN, R. C., and COOK, W. R. IVIMEY. Practical field ecology; a guide for the botany departments of universities, colleges and schools. 207 pages, illus. George Allen & Unwin, Ltd., Museum Street, London. 1946. 9 shillings.

There are several chapters on surveying, mapping, and analyzing of vegetation; several on the measurement of environmental factors and on the ecology of special habitats (ponds, streams, seashores). An appendix has keys to British grasses (vegetative), chief genera of British marine algae, and common genera of higher basidiomycetes. Verona M. Conway reviewed this book on page 467 of Ecology for October 1947.

OOSTING, HENRY J. The study of plant communities; an introduction to plant ecology. 389 pages, illus. W. H. Freeman and Co., San Francisco. 1948. $4.50.

This books is the first known to the abstracter that gives a clear, balanced picture of our native North American vegetation: its composition, environment, and dynamics. It does not contain a detailed account of the many plant communities--could not in a thousand pages, even if the vegetation of the continent were well known--but its orderly text and many photos are in themselves informative and, together with a list of 276 references, are good guides to one who wants further information. The final chapter on applied ecology, with its discussion of forestry, range management, and agriculture, makes clear our need for much information about living things and their environment and our need for integrating this information. Wildlife biologists have needed such a book. W. B. Turrill reviewed it on page 387 of Nature for September 11, 1948.

VEGETATION--COMMUNITIES--Continued

TANSLEY, A. G. Introduction to plant ecology; a guide for beginners in the study of plant communities. 260 pages, illus. George Allen & Unwin, Ltd., Museum Street, London. 1946. 8 shillings, 6 pence.

This is a thorough revision of Tansley's "Practical Plant Ecology", published in 1923. In its "Introductory", "Structure, Distribution and Development of Vegetation", "Methods of Studying Vegetation", "The Habitat", and "Ecological Work in Schools" it does a clear, thorough job of living up to its title. Examples of vegetation are British, but the book will be useful anywhere.

VEGETATION--FLORAS & MANUALS

HANES, CLARENCE R., and HANES, FLORENCE N. Flora of Kalamazoo County, Michigan: vascular plants. 295 pages, illus. Clarence R. Hanes, Schoolcraft, Mich. 1947. $4.00.

The plants of the county have been thoroughly studied during the past 15 years. As a result, the notes on distribution and abundance are up-to-date. The book has no keys, but there are occasional critical notes on species. Several species of Rubus are newly described here by L. H. Bailey. The county has prairie as well as hardwood forest and the flora is correspondingly rich. It will be useful in an area several times the size of Kalamazoo County. William B. Drew reviewed this book on page 467 of Ecology for October 1947.

PRESTON, RICHARD J., JR. North American trees (exclusive of Mexico and tropical United States). 426 pages, illus. The Iowa State College Press, Ames, Iowa. 1948. $4.00.

Keys, descriptions, drawings, and range maps combine to make this a usable field manual. It includes 568 species, omitting only hawthorns and shrubby willows.

PRESTON, RICHARD J., JR. Rocky Mountain trees. 2nd edition. 285 pages, illus. The Iowa State College Press, Ames, Iowa. 1947. $2.50.

The author has compiled a useful manual for the identification of the trees in the Rocky Mountain region. Montana, Idaho, Wyoming, Colorado, Utah, Nevada, Arizona, New Mexico, extreme western Texas, and the Black Hills of South Dakota are included, as well as the Canadian territory lying north of these states. Most of the descriptions are accompanied by drawings of plant parts and by distribution maps; and there are check lists of the trees of each state.--M. Alberts.

REEVES, R. G., and BAIN, D. C. Flora of south central Texas (revised). 298 pages, illus. The Exchange Store, A. and M. College of Texas, College Station, Texas. 1947. $3.90.

This book is a guide to the seed plants of the Southern Post Oak Area of the Texas coastal plain--the territory from Guadalupe and Goliad counties northeastward to Madison and Montgomery counties. The arrangement follows the Besseyan system, and there are keys and rather detailed descriptions. Only a few grasses are included because they are covered in Hitchcock's and in Silveus' books. There are omissions in other families.

VEGETATION--HABITATS
(See also VEGETATION--COMMUNITIES, McLean & Cook; Oosting; Tansley)

DAUBENMIRE, R. F. Plants and environment; a textbook of plant autecology. 424 pages, illus. John Wiley & Sons, Inc., New York. 1947. $4.50.

The author believes ".....that the material included in this book is indispensable as a background for anyone who would undertake to grasp the complexities involved in the ecology of plant communities." Separate chapters discuss environmental factors (soil, water, temperature, light, atmospheric, biotic, and fire) in great detail. The important details are not much more emphasized than the unimportant, so the book seems more of an encyclopedia than a text. An exception is the chapter on the fire factor--it is particularly informative and interesting. Final chapters on the environmental complex and on ecologic adaptation attempt to integrate the subject indicated by the book's title. One is not deceived into thinking the subject is simple. There is a bibliography of more than 600 titles. Paul B. Sears reviewed "Plants and Environment" on page 21 of Science for July 2, 1948.

SHIMEK, BOHUMIL. The plant geography of Iowa. University of Iowa Studies in Natural History 18(4): 1-178, illus. April 1948. $1.00.

Beginning in the 1870's Professor Shimek made detailed, systematic observations on Iowa vegetation for more than 50 years. He did not live to summarize them in print, but a part are finally published here under the editorship of H. S. Conard. They comprise a discussion of the environment but not of the plant communities. There are, however, chapters on succession and climaxes. Most of the original plant and animal life of Iowa was destroyed by land settlement during the author's life.

VEGETATION--FOREST

ACKERS, C. P. Practical British forestry. Second edition. 394 pages, illus. Oxford University Press, London. 1947. $6.50.

Two chapters are of especial interest to wildlife biologists. "Damage by the Elements, Vermin, and Other Pests" outlines tree-animal interrelations and tells how to control undesired animals. The rabbit is the most destructive. "Sport and Modern Forestry" goes into considerable detail in telling how to manage forests for the production of game birds and for hunting. E. P. Stebbing reviewed this book on page 296 of Nature for February 28, 1948.

DYKSTERHUIS, E. J. The vegetation of the western cross timbers. Ecological Monographs 18(3): 325-376, illus. July 1948.

This is a rather complete report on the area in northern Texas known as the Western Cross Timbers. The field studies on which it is based extended intermittently over the period 1938 to 1947. "The purposes of the study were (a) To determine and record boundaries and area; (b) to provide future research workers with a quantitative record of ordinary present-day vegetation, and of such relicts or original vegetation as remained; (c) to determine the nature of major deviations from average floristic composition and the habitat factors with which they were associated; (d) to determine local indicators of degrees of degeneration of range land by sites, as a basis for corrective measures; (e) to determine coactions between grazing animals and plants by monthly

VEGETATION--FOREST--Continued

observations of the former and autecological studies of the latter as means of contributing to knowledge of basic causes for range degeneration and regeneration; (f) to determine the course of subsere on the vast acreage of formerly cultivated lands when ungrazed, grazed, or seeded to climax grasses; (g) to determine features of the vegetation associated with each month of the year; and (h) to provide contemporary technicians in land use and management with a reference to locally applicable literature and the status of our knowledge of the plant ecology of the Cross Timbers."--M. Alberts

LeBARRON, RUSSELL K. Silvicultural management of black spruce in Minnesota U. S. D. A., Circular No. 791. 60 pages, illus. October 1948. 15¢ from Government Printing Office.

This circular contains a detailed account of the ecology of black spruce in northern Minnesota, where it forms the principal cover on 1½ million acres of swamplands. It discusses range and occurrence, trends in forest succession (including the effects of fires and logging), conditions affecting regeneration, growth and yield, and cutting and regeneration (in thrifty swamp stands and decadent swamp stands). Black spruce is one of the most valuable trees for pulpwood and the principal one that will grow in deforested swamps.

VEGETATION--GRASSLAND

STEFFERUD, ALFRED, editor. Grass; the yearbook of agriculture, 1948. 892 pages, illus. Superintendent of Documents, Washington 25, D. C. 1948. $2.00.

Many articles by many authors are grouped under 4 main headings: "Grass in the Nation's Life", "Grass in the Ten Regions" (Northeastern states, corn belt and lake states, south, northern great plains, southern great plains, mountain region, Pacific coast states, Alaska, Hawaii, Puerto Rico), "Grass in a Plant Round-up", and "Grass in Charts and Tables." Since the main concern of the volume is with forage, legumes are discussed along with grasses.

WRIGHT, JOHN C., and WRIGHT, ELNORA A. Grassland types of south central Montana. Ecology 29(4): 449-460, illus. October 1948.

The authors made this study in 1947 in 10 areas in a region extending from Virginia City eastward to Hardin. This region contains an alternation and intermingling of bunch grass and short grass prairie. 5 types of vegetation were recognized: (1) Festuca idahoensis, the most mesic, (2) Agropyron spicatum, (3) Agropyron spicatum-Carex filifolia-Bouteloua gracilis, (4) Bouteloua gracilis-Stipa comata-Koeleria cristata, and (5) Bouteloua gracilis-Stipa comata, the most xeric. Overgrazing has led to reduction of native grasses and increase of sagebrush.

VEGETATION--WILDLIFE PLANTS

CURTIS, JAMES D. Animals that eat ponderosa pine seed. The journal of Wildlife Management 12(3): 327-328. July 1948.

In the fall of 1947 near Idaho City, Idaho, 3 kinds of rodents and 9 kinds of birds were seen feeding on ponderosa pine seed in an 80-year-old stand. Red crossbills were the most consistent feeders. The author believes that in years of poor or medium seed production such feeding might prevent forest reproduction.

CYPERT, EUGENE, and WEBSTER, BURTON S. Yield and use by wildlife of acorns of water and willow oaks. The Journal of Wildlife Management 12(3): 227-231. July 1948.

This study was made on the White River National Wildlife Refuge, Arkansas, 1938-1940. There was great variability in yield between individual trees. There was also great variability in the period when most acorns dropped, both between individual trees and between the same trees in different years. Birds (songbirds) and rodents took from the ground 5% of marked acorns during each day and night. Birds took about 13% of the acorns from trees and ate 5-14% in the trees.

DAVISON, VERNE E. Bicolor lespedeza for quail and soil conservation in the southeast. U. S. D. A., Leaflet No. 248. 8 pages, illus. 1948. 5¢ from Government Printing Office.

"Bicolor is a preferred quail food. It has produced seed every year from northern Florida to Kentucky and Virginia. It is a perennial which you need plant but once." "It produces (with fertilizer) ample seed on sandy soils. Other kinds of wildlife do not compete with quail for this valuable food. Bicolor will hold birds throughout the winter on pine or oak ridges, preventing the fall shuffle to swamps and fields."

DILL, HERBERT H., and GREENWELL, GUY A. Improvements in efficiency in harvesting smartweed seed. The Journal of Wildlife Management 12(3): 324-325. July 1948.

The harvesting of Polygonum pennsylvanicum seed by combine has been handicapped by the difficulty of separating ripe seeds from blossoms, green seeds, stems, and fragments of leaves. In 1947 in Missouri closer adjustment of cylinder and rasp-bar, closer adjustment of screens, high cylinder speed, and use of a rubberized rasp-bar gave much cleaner seed. This simplified and accelerated the drying process.

EDMINSTER, FRANK C. Multiflora means more wildlife. Pennsylvania Game New 19(5): 10-11, 20, 28, illus. August 1948.

Multiflora rose is being used more and more as a living fence and as wildlife cover. The article includes directions for planting and discusses this rose's advantages and disadvantages, both to wildlife and agriculture.
--M. Alberts

VEGETATION--WILDLIFE PLANTS--Continued

HARMON, WENDELL H. Hedgerows. American Forests 54(10): 448-449, 480, illus. October 1948.

Osage-orange, which is used as a field boundary and fence in eastern Kansas, southeastern Nebraska, parts of southern Iowa, Missouri and Oklahoma, is rapidly disappearing. Hedgerows are being destroyed for various reasons. Often they are interfering with new field boundaries or the proper location of a waterway. Interference with crops or pasture is another reason for removal. The loss of these hedgerows means also the loss of the wildlife that uses them for nesting sites, escape cover, and a source of food. --M. Alberts.

HUNGERFORD, K. E. Safflower as a winter game bird food. The Journal of Wildlife Management 12(4): 436-437. October 1948.

During the past 2 years experimental plantings in northern Idaho indicate the value of safflower as winter pheasant and Hungarian partridge food. The nutritive value of safflower seed has been demonstrated with livestock. The plant is readily grown and, once established, is drought resistant.

MILLER, HAROLD W.; BALL, CHESTER C.; and KNOTT, NORMAN P. The comparative value of woody plants as food for upland game birds. State of Washington Department of Game, Biological Bulletin No. 8. 40 pages, illus. April 1948.

"A cooperative study between the Soil Conservation Service and the State of Washington Department of Game was started in 1940. This was to determine the wildlife value as well as the soil conservation value of the 470 species of woody plants under test." The study took place at the Pullman nursery unit of the Soil Conservation Service, Whitman County, Washington. It was found that "The seed of woody plants comprised approximately one-quarter of the food taken by pheasants. The use varied from 16 to 77 per cent according to the season of the year. Hungarian partridges made little use of the woody plantings. During the course of the study ninety-nine woody species produced fruit on the nursery. The fruit of thirty-five species was utilized by pheasants as food. The following groups and species were the most important: hawthorns, snowberries, wild roses, dogwoods, wild cherries, matrimony vine, Siberian peashrub, sumac, and bladdersenna. Fruits of Russianolive were not preferred by pheasants. The growth habits and requirements of the various woody species shown to be of value are set forth in detail."--M. Alberts.

WANDELL, WILLET N. Agricultural and wildlife values of habitat improvement plantings on the Illinois black prairie. Transactions of the Thirteenth North American Wildlife Conference. Pages 256-269, illus. 1948.

In many parts of Illinois suitable cover is scarce. The author describes The work done since 1939 on a 4-square-mile experimental area in Champaign County on which plantings have been made along fence-rows, streambanks, and woodlot borders, and in blocks. He evaluates the benefits of these plantings to wildlife (pheasants, cottontails, furbearers, and songbirds) and to agriculture (living fences, insect control, effect on crops, windbreaks, and attractiveness).

VEGETATION--AQUATIC

BENSON, LYMAN. A treatise on the North American Ranunculi. The American Midland Naturalist 40(1): 1-261. July 1948.

A systematic account of 96 species of Ranunculus (buttercups) including keys, descriptions, and details of distribution.

CHAMBERLAIN, E. B., JR. Ecological factors influencing the growth and management of certain waterfowl food plants on Back Bay National Wildlife Refuge. Transactions of the Thirteenth North American Wildlife Conference. Pages 347-355, illus. 1948.

"The present production of submerged waterfowl food plants is much below the potential for the area....." The principal cause is turbidity due to wave action and carp. Continued prevention of pollution and maintenance of a low carp population are recommended. Marsh management holds the best possibilities for improving waterfowl food plant conditions on Back Bay.

GERKING, SHELBY D. Destruction of submerged aquatic plants by 2,4-D. The Journal of Wildlife Management 12(3): 221-227, illus. July 1948.

Maintenance of the recreational value of many lakes requires the reduction of submerged aquatic plants. In laboratory experiments Anacharis canadensis, A. densa, Vallisneria, and Myriophyllum sp. were inhibited in a 2,4-D concentration of 10 ppm. and were killed by one of 100 ppm. Cladophora was unaffected by 100 ppm. of 2,4-D. The present cost of the chemical limits its use.

HALL, T. F.; PENFOUND, W. T.; and HESS, L. D. Water level relationships of plants in the Tennessee valley with particular reference to malaria control. Journal of the Tennessee Academy of Science 21(1): 18-59, illus. January 1946.

The authors describe the effects of fluctuating water levels on the germination, sprouting, survival, and growth form of various woody and herbaceous species. They then discuss water level management and management schedules. The observations, made on 11 reservoirs, 3 natural ponds, and 2 experimental pools during a 4-year period, are clearly summarized. They should be useful in the management of some waterfowl areas.

LINDSEY, ALTON A. Terron vegetation in New Mexico. Ecology 470-478, illus. October 1948.

"Natural sod of sedge-meadows along the middle Rio Grande is cut into terrones, sun-dried and used to construct buildings and walls. Saltgrass (Distichlis stricta) and Juncus balticus largely contribute the roots and rhizomes binding terron soil." Following the removal of these earth bricks there is a succession through 4 stages: (1) Flaveria, (2) Triglochin-Distichlis, (3) Distichlis-Scirpus, and (4) Distichlis-Juncus-Anemopsis.

VEGETATION--AQUATIC--Continued

SIGLER, WILLIAM F. Aquatic and shore vegetation of Spirit Lake, Dickinson County, Iowa. Iowa State College Journal of Science 23(1): 103-124, illus. October 1948.

The author describes the environment and the plant communities; maps the distribution of the aquatic communities; and gives relative abundance and distribution for 116 species. He made this survey in 1946 while studying the life history of white bass. The greatest concentrations of smaller animals in the bass' food chain are in the immediate vicinity of the submerged rooted aquatics.

LAND & SOILS

STAMP, L. DUDLEY. The land of Britain: its use and misuse. 507 pages, illus. Longmans, Green and Co., London. 1948. $10.00.

This is a report of the British Land Utilisation Survey. It discusses the history of land use in Britain; the distribution of grassland, arable land, orchards, market gardens, moorland, heathland, forest, and settlements; accessibility; geology and geomorphology; climate; soils; farms and types of farming; ecology of domesticated plants and animals. More than 200 maps and graphs greatly increase the book's usefulness. Wildlife biologists, whether interested in local, areal, or regional problems, frequently need this kind of information. Usually they have to dig it out themselves. On page 906 of Nature for June 12, 1948 is a review by E. John Russell.

WATER

(See also WILDLIFE (GENERAL)--MORTALITY, Beatty)

ANONYMOUS. Federal water pollution control program. Public Health Reports 63(33): 1066-1068. August 13, 1948.

The Water Pollution Control Act was passed during the second session of the 80th Congress and became Public Law 845. Under this law the Federal Works Administrator is authorized to make loans to any state, municipality, or interstate agency for preparation of plans and construction of necessary treatment works to prevent the discharge by such state or municipality of untreated or inadequately treated sewage or other waste into interstate waters. The aim of the pollution control program is not to return streams to their status of a hundred years ago but instead "All water uses of the stream will be considered and the treatment recommended will be based on these uses. Due regard will be given to the health, welfare, and economic considerations of the local situation and their effect upon the national welfare."--M. Alberts.

COKER, R. E. This great and wide sea. 325 pages, illus. The University of North Carolina Press, Chapel Hill, N.C. 1947. $5.00.

This book is a substantial introduction to oceanography. In 3 parts it deals with history and geography, chemistry and physics, and sea life. In the last, general conditions, plant life, plankton, benthos, and nekton are described in detail and the facts about them summarized. Alfred C. Redfield reviewed "This Great and Wide Sea" on page 472 of Ecology for October 1947.

WATER--Continued

McLAIN, JOSEPH H., and others. Maryland Water Pollution Control Commission: First annual report, 1947. 50 pages, illus. Water Pollution Control Commission, Annapolis, Md. 1948.

"It is the purpose of this report to describe what progress has been made in the abatement of water pollution in the State of Maryland and to review the program of the Commission for the future. It is also the purpose of this report to focus attention on the magnitude of the problem as it affects all river basins,....."

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